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NAME OF AUTHOR/*NOM DE L'AUTEUR* KHAMIS @ AMIR BIN AWANG

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NAME OF SUPERVISOR/*NOM DU DIRECTEUR DE THÈSE* G.W. FITZSIMMONS, Ph.D.

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A CROSS-CULTURAL VALIDATION STUDY OF THE VOCATIONAL PREFERENCE INVENTORY AND THE WORK VALUES INVENTORY

by

©

KHAMIS @ AMIR BIN AWANG

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled A Cross-Cultural Validation Study of the Vocational Preference Inventory and the Work Values Inventory submitted by Khamis @ Amir Bin Awang in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Educational Psychology.

Supervisor

W. Hague

Al Herman
External Examiner

Date. 15 May, 1995

Abstract

The major purpose of this study was to examine the construct validity of the Vocational Preference Inventory (VPI) and the Work Values Inventory (WVI) for use with Form IV Malaysian students in Penang, Malaysia. In addition, this study also examined the relationship between rural-urban residence and socio-economic status (SES) with the vocational preference and work values among the subjects, the viability of the hexagonal model and the VPI and WVI scale correlations.

To achieve these objectives, a cross-cultural comparison of the VPI and the WVI factor structures was made between the Canadian and the Malaysian subjects. 472 Grade X boys from the City of Edmonton and the County of Parkland constituted the Canadian sample, and 613 Form IV boys in 24 Secondary Schools in Penang made up the Malaysian sample.

The principal components analysis with varimax rotation was used to analyze the sub-scales in both tests. The results show that the Malaysian VPI structure compares very well with that of the Canadian. These results provide some tentative evidence that the VPI is valid for use with the Malaysian students to assess their vocational interests. The results also indicate that for both groups, rural residence was not found to be a handicap to the expression of their vocational interests. However, the SES does

seem to be related to their vocational preference.

With regard to the WVI, the results show that only for the SES level two urban Malaysian group does it have some evidence of validity. The validity of the WVI for the total Malaysian group requires additional evidence.

With the other sub-groups, the validity of the WVI is questionable.

The results also show that rural-urban residence is related to the work values of the subjects. So is their SES.

Supplementary analyses indicate that the hexagonal model was a viable model to measure the psychological relationships among the six personality types for both Canadian and Malaysian boys.

Finally, the VPI and WVI scale correlations show that the two tests are independent of each other. The similarity in the VPI and WVI correlation pattern between the Canadian and Malaysian boys provide some evidence that the VPI and the WVI are valid for use with the Malaysian boys.

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CHAPTER I

Introduction

Guidance was introduced into the Malaysian schools in 1967. One of the needs of the Malaysian guidance program is standardized tests of interests, aptitudes, and work values (Ministry of Education, Malaysia, 1971).

One way to meet the need for the standardized tests is to use the existing foreign (non-Malaysian) standardized tests. To do so, however, requires consideration being given to the problems inherent in the cultural differences between the Malaysian and the American cultures, for which existing tests were developed.

The purpose of this study was to examine the validity of two existing North American standardized tests of vocational interests and work values for use in Malaysia. The tests were the Vocational Preference Inventory (VPI) and the Work Values Inventory (WVI).

The review of the literature will be presented in the following sequence: an overview of the problems relating to cross-cultural studies, vocational interest tests with special reference to the VPI (Holland, 1965), work values tests with special reference to the WVI (Super, 1970), and finally the relationship between socio-economic status (SES), urban-rural residence of subjects, and vocational preference.

Arising from the review of the literature, several questions are raised. The questions constitute the problems this study will address itself to.

An Overview of the Problems in Cross-Cultural Studies

Brislin, Lonner, and Thorndike (1973), Secherest, Fay, and Zaidi (1972), and Warwick and Osherson (1973) presented four major problems in cross-cultural studies: conceptual equivalence, equivalence of measurement, linguistic equivalence, and sampling problem.

The conceptual equivalence problem consists of three parts: equivalence of concept, definitional comparability, and identifiability.

The conceptual equivalence problem (Przeworski & Teune, 1966-1967) exists because some concepts are universal in nature, like mother, while others are limited to certain cultures only, like the caste system in India. This universality and specificity problem (Warwick & Osherson, 1973) of the concepts is sometimes referred to as the etic-emic problem respectively (Brislin et al., 1973).

The definitional comparability and identifiability are concerned with how similar are the definitions of the concepts under study, and how easily identified are they.

The VPI uses occupational stereotypes to assess the vocational interests and personality traits of the individual. Up to date, there is sufficient literature to show that occupational stereotype is a viable construct to assess one's interests (Holland, 1973).

The occupational titles used in the VPI were similar to those found in Canada and in Malaysia and were easily identified. The way these occupations were defined in the Canadian Classification and Dictionary of Occupations (1971-73) and the Malaysian Dictionary of Occupational Classification (1969) is also similar, thus minimizing the conceptual equivalence problem in the study.

Conceptual equivalence was most important in this study because this study was concerned with the construct validity of the VPI and the WVI across cultures.

The equivalence of measurement problem refers to the question of comparability of responses, stimuli, context, reliability, and validity, as well as researchability. These problems are more closely related to a survey study which employs open-ended questions. In a study which employs forced-choice questions, these problems are somewhat minimized, in that standard response format is provided and the range of variation fixed. For example, in evaluating the statement in the WVI, the relative importance of each statement may only range from 1 (unimportant) to 5 (very important).

Besides avoiding open-ended questions to minimize the equivalence of the measurement problem, Duijker and Rokkan (1954) suggested four options: study design, preliminary exploration, flexible question format, and identity-equivalence procedure. Of these strategies, preliminary exploration was found most appropriate for the present study. Preliminary exploration gives an understanding how the subjects in both cultures perceived concepts, such as "like," "dislike," or "undecided" as are employed in the VPI.

The third major problem is the linguistic equivalence problem. This problem is associated with lexical and grammatical meaning. A word in isolation conveys a different meaning from the same word in context. The word "father" in isolation may give the meaning of "a father of a child or children" or "a priest." However, the statement "My father works at the mill" implies immediately that the word "father" in this case is not a "priest." Problems of this kind become serious when translation of the original is necessary, and translation of the original into a second language is a very common phenomenon in cross-cultural studies.

The most commonly employed technique to minimize the seriousness of this problem is bilingual translation and back-translation (Secherest et al., 1972). For the VPI, the linguistic problem did not arise as the occupational titles in the VPI correspond to those found in Malaysia. They are easily translated into the Malaysian language.

For the WVI, however, bilingual translation and back-translation and preliminary try-outs became necessary. A brief description of how this was done will be presented in Chapter 2.

Finally, the sampling problem. Unlike the general conception of sampling which concerns itself solely with the selection of the subjects, in cross-cultural studies sampling is expanded to include consideration for research sites, research methods, and the choice of indicators to measure the major concepts and combining these indicators into indices (Przeworski & Teune, 1966-1967). To meet some of the sampling considerations in cross-cultural studies, the subjects in this study were of comparable age, equivalent social class, and from equivalent rural or urban settings.

Problems faced by the researcher in this cross-cultural study were no doubt many. Yet, preliminary explorations of both the Canadian and the Malaysian cultures vis-a-vis vocational behavior have provided some understanding and insight into both cultures. This knowledge has helped the researcher in selecting the tests to be studied to meet the need of the Malaysian guidance program.

Vocational Interest Tests with Special Reference to VPI

Of the several North American interest tests available, some meet more of the criteria of suitability for cross-cultural research than others. Some have been more extensively used, like the Strong Vocational Interest Blank (SVIB) and the Kuder Preference Record (KPR), than others. In Alberta, the SVIB, the KPR, and the Safran Interest Inventory (SII) are widely used in the schools. These tests, however, are not as suitable for cross-cultural studies as Holland's VPI. The SVIB, KPR, and SII contain statements about activities which are not conceptually equivalent in both Canadian and Malaysian cultures, such as "pursuing bandits in a sheriff's possé," and are not readily translated into the Malaysian language without losing conceptual equivalence. On the other hand, the VPI does not contain statements of this kind. The VPI employs occupational titles to assess vocational interests of the individuals. These titles, as indicated in the preceding section, are easily defined, identified, translated, and measured.

The VPI is both a personality and interest test which evolved from Holland's theory of vocational choice (1959, 1966, 1973), which states that:

1. In the American culture, people may be categorized as one of six types: realistic (R), investigative (I), artistic (A), social (S), enterprising (E), or conventional (C). A type is a model against which a person is measured. A realistic type, for example, is a person who exhibits interests and competencies in jobs that require physical manipulation of tools or machines. An airplane mechanic is a person classified as a realistic type person. People of a given type have a set of characteristic traits, such as competencies, values, interests, life goals, and behaviors.

2. Corresponding to the six types, there are six kinds of environments. In each environment may be found a dominance of the corresponding type. That is to say, in realistic environment, more

people of the realistic type are found. In an accounting office, most workers will be conventional in type.

3. People of a given type will search for an environment that will allow them to exhibit their skills, to express their values and attitudes, and to be involved in agreeable problems and tasks. To a lesser extent, people of a given type in a given environment tend to recruit people having similar traits into the environment.

4. The behavior of an individual is determined by the interaction between his personality and the characteristics of the environment.

In addition to these core assumptions, Holland (1973) makes four secondary assumptions which he labeled as consistency, differentiation, congruence, and calculus.

By consistency, Holland (1973) means that some people (type) or environments are more closely related to one another than others. He found that people and environments characterized as realistic and investigative have more in common between them than with people or environments characterized as social or enterprising.

Differentiation defines the degree of psychological resemblance to a particular type. Differentiated people possess characteristics that resemble a particular type. Undifferentiated people possess about an equal number of characteristics that resemble several types. That is to say, the VPI profile of a differ-

4

entiated person will have a peak, while the VPI profile of an undifferentiated person will be more or less a flat line.

Congruence refers to compatability or agreement between characteristic traits possessed by the individual of a given type and the demands of the environment he is in. In compatible pairing, people of a given type flourish. On the other hand, when personal characteristics do not correspond with the demand of the environment, incongruence occurs.

The last secondary assumption--calculus--states that the relationship between people of a given type or the environments can be ordered in a hexagonal model (Holland, Whitney, Cole, & Richards, 1969) as in Figure 1. The size of the coefficients indicates the degree of closeness of the psychological relationships among the six types. The psychological relationships may be ordered as adjacent pairs, such as R and I, alternate pairs, such as R and A, and opposite pairs, such as I and E (Wakefield & Doughtie, 1973).

Holland's theory on the whole has been well developed, extensively researched, and has several commendable characteristics (Osipow, 1973). However, this theory is found deficient in the following aspects.

Nowhere in Holland's theory did he indicate how each personality type develops. The developmental stages were never discussed. In the light of the present emphasis on career development and ca-

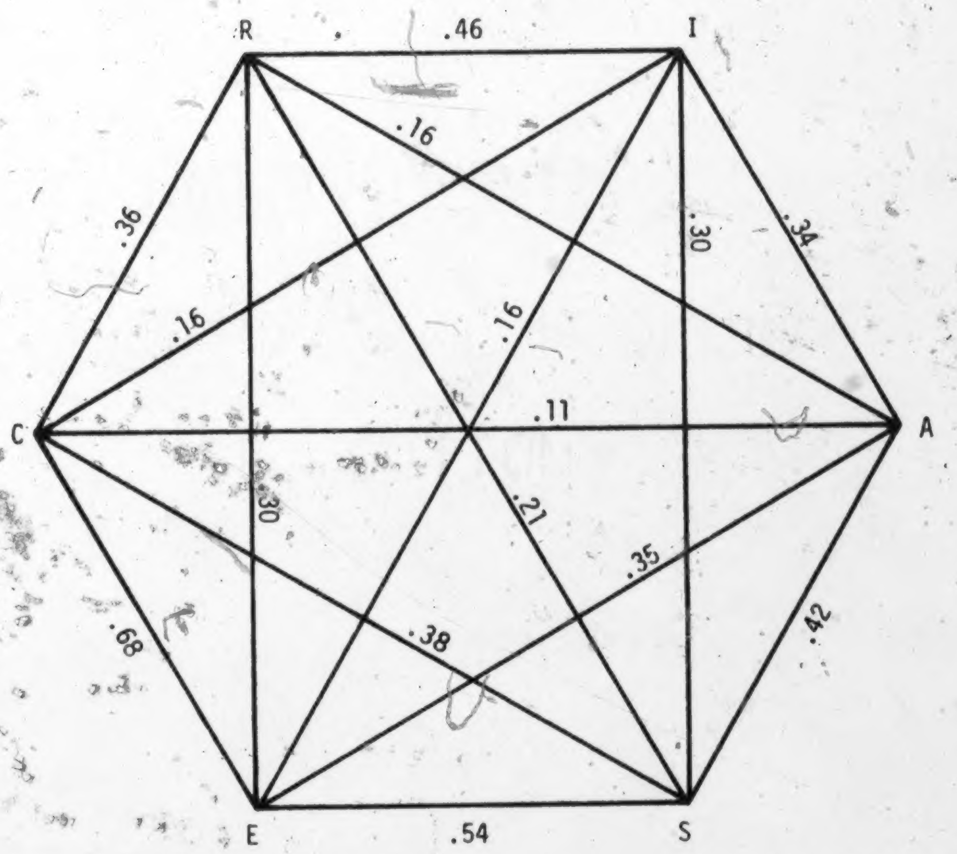
R
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Figure 1. Hexagonal model of psychological relationships between people of different types. (Source: Holland, Whitney, Cole, & Richards, 1969)

reer education (Bailey & Stadt, 1973), a knowledge of how each personality type develops would assist those in career counseling and career education to provide better service to the individuals.

Holland (1962, 1966) indicated that the level of one's vocational aspiration is dependent upon intelligence and self-evaluation. Such a formulation would seem oversimplified. The importance of social forces surrounding the individual has not been adequately taken care of by such a formula.

Finally, it will be remembered that Holland developed the notion of level hierarchy on the basis of his studies involving National Merit finalists. One would ask how typical is his sample of the normal population, or how generalizable are the findings of his study to the normal population. In fact, one would question the wisdom of extrapolating the observation on the National Merit finalists to the normal population. If it is felt that such extrapolation is not appropriate, how useful would be the formula: level hierarchy = intelligence + self-evaluation?

In classifying people into the six types, Holland employed the VPI. The VPI consists of 160 occupational titles which have been classified into 11 scales: realistic (R); investigative (I); artistic (A); social (S); enterprising (E); conventional (C); status (ST); masculinity (M); self-control (SC); acquiescence (AC); and infrequency (IN). The first six scales purport to measure vocational interests, and the last five scales, personality variables.

Holland (1965) reported that the VPI scales have moderate to high homogeneity of content with a range of .83 to .89 for a sample of 6,289 college freshmen. The retest reliability over a period of one year ranges from .61 to .86.

During administration of the VPI, each individual (or group) is required to read each occupational title carefully, then decide whether he likes or dislikes the job, or is undecided about it. To indicate a choice, the person being tested is asked to blacken a Y (like) or N (dislike) or to leave the Y and N unmarked (undecided) on a separate answer sheet. Using a prepared stencil, raw scores on the 11 scales may be obtained and a profile prepared for interpretation.

Table 1 provides a description of areas of interest, competence, and deficit for each personality type. Table 2 provides an interpretation of high and low scores on each of the five personality scales.

Studies to establish the construct validity of the VPI may be classified into three broad categories: (a) Studies which examined the relationships between Holland's personality types or orientations and a set of variables. (b) Studies which examined the validity of the VPI scales in relation to other personality and interest tests. (c) Studies which factor analyzed the VPI scales

Table 1

Personality Types and Corresponding Areas of Interest, Competencies and Deficits

Type	Interest In	Competent In	Deficits In
Realistic (R)	activities involving explicit, ordered, or systematic manipulation of objects, tools, machines, and animals	manual, mechanical, agricultural, electrical, and technical	social and educational competencies
Investigative (I)	observational, symbolic, systematic, and creative investigation of physical, biological, and cultural phenomena to understand control such phenomena	scientific and mathematical	persuasive competencies
Artistic (A)	ambiguous, free, unsystematized, activities that entail the manipulation of physical, verbal, or human materials to create art forms a product	artistic competencies in language, art, music, drama, and writing	clerical and business system competencies
Social (S)	manipulation of others to inform, train, develop, cure, or enlighten	human relations such as interpersonal and educational competencies	manual and technical competencies

Table 1 (Continued)

Personality Types and Corresponding Areas of Interest, Competencies, and Deficits

Type	Interest In	Competent In	Deficits In
Enterprising (E)	manipulation of others to attain organizational goals and economic gains	leadership, interpersonal, and persuasive competence	scientific competencies
Conventional (C)	activities that entail the explicit, ordered systematic manipulation of data	clerical, computational, and business system competencies	artistic competencies

Table 2

VPI Personality Scale Interpretation

Scale	High Scores	Low Scores
Self-Control (SC)	over-control, and a tendency to be inhibited, constricted, passive, and responsible	impulsiveness, and a tendency to act out
Masculinity (M)	frequent choice of masculine occupational roles	frequent choice of feminine occupational roles
Status (ST)	self-confidence and a tendency to choose high prestige-ranking occupations	self-deprecation
Infrequency (IN)	atypical vocational preference--preferences for unpopular, feminine, and low status occupations	positive evaluation of one's abilities and personality, and a tendency to choose occupations in the normal way
Acquiescence (AC)	expressing a social, cheerful, active, frank, and conventional outlook about vocational world	expressing an unsociable, depressive, passive, defensive, and unconventional outlook about vocational world

and compared the factor structure to the hexagonal model (Holland et al., 1969).

Personality types and attributes. The first category of studies was primarily conducted by Holland (1962, 1963, 1963-1964, 1964, 1965, 1968). The major purpose of these studies was to examine whether or not people who have been categorized by the VPI into the six personality types would exhibit consistently different patterns of variables associated with each type.

The first exploratory study (Holland, 1962) was a massive attempt to establish the relationships between personality type or orientation and a variety of variables, which include self-ratings on an adjective checklist, college major, expressed vocational interests, parental attitudes, extracurricular activities, and values and attitudes.

The results of this study supported the hypotheses of Holland's theory. It was found that students with different dominant personal orientations (defined by coded scales from the VPI) have significantly different attributes, including academic aptitudes, fathers' occupation, self-concepts, extracurricular activities and interests, college majors, career choices, achievements, and parental attitudes and values.

The attributes of students with a given dominant personal orientation generally correspond to the attributes hypothesized for the corresponding model orientation.

This study, however, suffered from several experimental, sampling, and theoretical limitations. First, the ambiguity of some parts (level hierarchy) of the original statement of the theory did not permit a rigorous testing of the hypothesis that level hierarchy was a function of intelligence and self-evaluation alone. Secondly, the homogeneity of the student sample limited the degree of differentiation and the size of the obtained correlations. Probably a more efficient discrimination could be made if more diverse samples of students were used.

Encouraged by the results in the 1962 study, Holland (1963-1964) expanded the sample size and the original questionnaire by including items relating to how individuals coped with problems and their vocational daydreams. The results of this study were similar to those of the 1962 study. The study generally showed that self-description of each personality type corresponded to the theoretical formulations. It was also found that, in some cases, there was some inconsistency in the way the students of this type described themselves. Such inconsistency called for further research.

With a much larger sample comprising 1,437 National Merit finalists, Holland (1964) replicated the above study. Again, the results of this study were similar to the other studies that were conducted. Perhaps the major flaw of these studies was the homogenous nature of the sample selected. Perhaps, as Holland indicated (1973), in all the previous studies, the size of his original sample was reduced to one-twelfth of its total, due to categorization according to type and sex. Holland felt that he might be able to detect this shortcoming if a larger sample was used.

Abe and Holland (1965a, 1965b) assessed 12,432 college freshmen from 31 colleges and universities for their interests, favorite activities, attitudes, life goals, and vocational aspirations. The results of these studies supported all the above findings with much less overlapping across personality types.

It may be concluded from the evidence provided in the above discussion that the VPI is a valid instrument to categorize people into six distinct personality types. The overlapping found in all the above-mentioned studies was later discovered (Holland et.al., 1969) as being caused by shared characteristics among the personality types.

The preceding review of the literature has shown that the VPI is a viable and valid instrument for classifying people as one of the six personality types. In the following section, the concurrent validity of the VPI will be reported in relation to other interest and personality types.

Concurrent validity of the VPI. Several studies have examined the relationship between the scores on the VPI and the scores on the

SVIB (Cole & Hanson, 1971; Eggenberger & Herman, 1972; Haase, 1971; Hughes, 1971; Lee & Hedahl, 1973; Wall, Osipow, & Ashby, 1967).

Using a sample of 186 male college freshmen, Wall, Osipow, and Ashby (1967) showed that a student's rankings of the types according to his resemblance to each resulted in a relatively clear and significant relationship between student rankings and the SVIB group score. In other words, students see themselves in ways that correspond with their interest scores. Extending this observation, Wall et al. showed a strong relationship between student's choice of occupation, sorted according to type, and his SVIB group score.

Cole and Hanson (1971) carried out a study to determine indirectly whether the circular configuration of interests proposed and demonstrated by Roe and Holland is common to other interest inventories. They included in their study the SVIB, Holland's VPI, the Kuder Occupational Interest Scale (KOIS), the Minnesota Vocational Interest Inventory (MVII), and the American College Testing Program's Vocational Interest Profile (ACTVIP).

These instruments were examined separately with the assumption that if the circular arrangement is common to the internal structure of several instruments, the arrangement itself would provide a basis for direct comparison of the instruments.

Holland's circular configuration was used as the basis of comparison. It was found that of the four tests, the SVIB, the KOIS, and the MVII corresponded very closely to Holland's structure. Indirectly, it provides evidence that the VPI and the SVIB have common interest structure.

Although the study provides supportive evidence that the VPI and the SVIB have common interest structure, the use of a different group of people for each instrument raises some questions, such as the comparability of the two groups.

Eggenberger and Herman (1972) examined the type-environment congruence. Using the course of study as the basis, they assigned the 730 male students at the Southern Alberta Institute of Technology to four of Holland's personality types--realistic, investigative, enterprising, and artistic. The assumption was that those found in realistic environment would score highest on Group IV SVIB scales. Similarly for the other groups.

The results these researchers obtained supported their hypotheses. Better results might have been obtained had these researchers used a larger sample size for the students in the Industrial Engineering Technology and for the students in the Graphic Arts Administration.

Haase (1971) correlated six VPI scales and 47 scales of the SVIB and found that the correlation ranged from .66 to .86. Haase concluded that the VPI and the SVIB measure similar dimensions.

Other researchers (Cockriel, 1972; Lee, 1970) obtained similar positive evidence. On the basis of the evidence produced thus far, one might conclude that the VPI does have concurrent validity vis-a-vis other interest inventories, in particular the SVIB.

While the VPI is a valid interest test, Holland (1966, 1973) felt that in relation to his theory, it is more of a personality test, in that interests shown by each group of people of a given type is a manifestation of the personality type. Holland's arguments were well supported (Holland, 1973). But, one would not help feeling that the addition of five personality scales (self-control, masculinity, status, infrequency, and acquiescence) to the inventory was more in response to the clinical need (Berdie, 1972). This assumption made by Berdie (1972) might be correct, but there is plenty of empirical evidence that testifies towards the validity of the VPI as a personality test (Holland, 1973). The VPI scores have been correlated with several personality tests, such as the California Psychological Inventory (Folsom, 1971), the 16 PF (Williams, 1972), the Edwards Personality Preference Scale (Harvey, 1971), and the Minnesota Multiphasic Personality Inventory (Patterson, Marron, & Patterson, 1971).

Williams (1972) executed a complex study in which he examined the relationship between the VPI scores and the scores on the 16 PF, the Allport-Vernon-Lindzey Study of Values (AVL), and the Miller Occupational Values Indicator (MOVI). Using a variety of statistical techniques, such as the analysis of variance, the multiple analysis of variance, the multiple discriminant analysis, and the canonical correlation, Williams found that the personality orientations or types as determined by the field of study correspond highly with the VPI, the AVL, and the MOVI. The 16 PF scores were usually consistent with the characteristics attributed to the types.

In an indirect way, Williams concluded that the personality variables of a given personality type may be assessed both by the VPI and other personality tests. Findings of similar kinds were reported by Patterson et al. (1971).

In light of the mixed evidence reported above, the VPI does seem to be better at measuring interests than personality variables.

Secondly, many of the above studies dealt with adult groups. Would the VPI be as efficient an instrument to assess the vocational interests of the high school boys?

Thirdly, all the subjects were whites. Would the VPI be a valid instrument for measuring vocational interests of nonwhites, in this case, the Malaysian students?

These are some of the questions the present study will attempt to answer.

VPI factor structure. The third category of studies examined the validity of the VPI in two ways: firstly, it examined the comparability of the hexagonal model developed by Holland et al. (1969)

with the researcher's model; secondly, it compared the factor structure of the VPI with a reference factor structure by Wakefield and Doughtie (1973).

Several studies were found in the first group (Cole & Hanson, 1971; Crabtree & Hales, 1974; Wakefield & Doughtie, 1973).

In the Wakefield and Doughtie study (1973), 373 male white undergraduate students were administered the VPI. Interscale correlations were factor analyzed by the principal components analysis. These researchers found the relationships among the personality types in their analysis corresponded very closely to the hexagonal model developed by Holland and others (1969). They concluded that the hexagonal model is a viable model to demonstrate the relationships between personality types.

Later, the findings of Wakefield and Doughtie were corroborated by Crabtree and Hales (1974), who examined the factor structure of the VPI of 1,431 rural school students. These researchers found that the relationships among types were in the same direction as predicted by Holland et al. (1969). In addition, Crabtree and Hales (1974) also found correspondence in the rank-order of the correlations as proposed by Holland. Their findings added weight to the validity of both the VPI and the hexagonal model.

Wakefield and Doughtie's (1973) findings were used in another study conducted by Yom, Doughtie, Chang, Alston, and Wakefield

(1975) to examine the validity of the VPI for use with black undergraduate students. They hypothesized that if the responses of the black students on the VPI corresponded to the responses made by the white students in the Wakefield study, then the factor structure of both groups would be similar.

As this study is very closely related to the present study, it deserves a more detailed analysis.

Yom et al. (1975) were concerned about how one interprets the differences in means across types for various ethnic groups. Until it is established that the means, mean the same for different groups of people, the interpretation may be meaningless. They were, in other words, concerned about the construct validity of the VPI for use with the black population.

They administered the VPI to a group of 115 black undergraduate students with the assumption that if the factor structure of the VPI for the black students corresponded to the factor structure of the VPI for the white students in the Wakefield and Doughtie study (1973), then there would be evidence that the VPI would be measuring the same underlying variables. In the Wakefield and Doughtie study, six factors were identified: conventional-economic, feminine-social, social desirability, material world, status, and artistic.

Yom et al. (1975) obtained the same factors as above, and the distribution of the VPI scales corresponded very closely to what Wakefield and Doughtie had earlier found. Yom et al. concluded that generally the structure is similar. The only deviant pattern observed was that in the earlier study artistic scale was relatively highly loaded in artistic factor. Yom et al. found in their study less obvious loadings. Nonetheless, the cosine was high. Yom et al. concluded that "although the artistic scale may measure in subtly different manners in the two populations, it is, to a great degree, the same variable in both" (Yom et al., 1975, p. 12).

Findings of this kind provide more meaning in the interpretation of the differences in means for the black students as the VPI has been shown to be valid for use with them.

Arising from this demonstrated capability of the VPI, one would ask: Would the VPI factor structure for the Malaysian students correspond to the VPI factor structure for the Canadian students whose factor structure would be used as reference factor structure? Would it be similar across the SES levels and urban-rural settings too?

Work Values with Special Reference to the WVI

The concept of work values is of recent origin (Zytowski, 1970). No adequate definition of this concept is yet available. In the early part of its development, work values were generally conceived of as factors contributing to job satisfaction (Astin, 1958; Lyman, 1955; Miller, 1956; Schwarzeller, 1959).

The work values examined in the present study stemmed from Ginzberg, Ginsburg, Axelrad, and Herma's (1951) trichotomous concept of the intrinsic, extrinsic, and concomitant satisfactions.

The intrinsic work values refer to the satisfaction or pleasure derived from a specific activity and in the accomplishment of specific ends, such as independence in the artistic activity. The extrinsic work values are related to rewards or pleasure derived at the end of the activity, such as economic returns or prestige. The concomitant work values are pleasures derived from a particular work setting or working with a particular group of people (peers or leaders) (Ginzberg et al., 1951).

Very few tests have been developed to assess the work values. Of those mentioned by Zytowski (1970), only Super's Work Values Inventory has been standardized.

The WVI is a test which purports to measure the rewards or satisfactions people seek in, and from work. It consists of 45 statements which assess the following 15 work values: economic returns (ER), prestige (PR), associate (AS), security (SE), supervisory relations (SR), way of life (WL), variety (VA), independence (IN), surrounding (SU), altruism (AL), achievement (AC), intellectual stimulation (IS), esthetic (ES), management (MA), and creativity (CR).

Table 3 provides a description of work values in relation to

Table 3

Work Values in Relation to Work

Work Values	Work Associated With
Altruism (AL)	work which enables one to contribute to the welfare of others
Esthetic (ES)	work which permits one to make beautiful things and to contribute beauty to the world
Creativity (CR)	work which permits one to invent new things, design new products, or develop new ideas
Intellectual Stimulation (IS)	work which provides opportunity for independent thinking, and for learning how and why things work
Achievement (AC)	work which gives one a feeling of accomplishment in doing a job well
Independence (IN)	work which permits one to work in his own way, as fast or as slowly as he wishes
Prestige (PR)	work which gives one standing in the eyes of others and evokes respect
Management (MA)	work which permits one to plan and lay out work for others to do
Economic Returns (ER)	work which pays well and enables one to have the things one wants
Security (SE)	work which provides one with the certainty of having a job even in hard times
Surroundings (SU)	work which is carried out under pleasant conditions--not too hot or too cold, noisy, dirty, etc.
Supervisory Relations (SR)	work which is carried out under a supervisor who is fair and with whom one can get along
Associates (AS)	work which brings one into contact with fellow workers whom one likes
Way of Life (WL)	work which permits one to live the kind of life one chooses and to be the type of person one wishes to be
Variety (VA)	work that provides an opportunity to do different types of jobs

work.

The individual (or group) taking the test is required to indicate the relative importance of each of the 45 statements to him (or them). The degree of importance is rated on a 5-point Likert-type scale, ranging from "very important," weighted 5, to "unimportant," weighted 1. The score for each value is calculated by summing up the weights given to three predetermined statements for each work value. The total score for each work value can range from 3 to 15, 3 being lowest (unimportant) and 15 being highest (very important).

The retest reliability of the WVI ranges from .74 to .88, the median being .83 (Super, 1970). The validity of the test, as reported in the manual (Super, 1970, pp. 35-43), is respectable.

The major criticism of this inventory centers on its reliability. Berdie (1972) questioned its retest reliability, Gable (1973) its internal-consistency. Tiedeman (1972), however, felt that the WVI is a reliable measure of the work values.

Studies using the WVI are few in number. They may be categorized into (a) factorial study of the WVI, (b) work values and occupational choice, and (c) the WVI with nonwhite ethnic groups.

Factorial study of the WVI. The first category of studies includes those conducted by Hendrix and Super (1968), Kinnane and Gaubinger (1963), Kinnane and Pable (1962), and O'Connor and Kinnane

(1961).

O'Connor and Kinnane (1961) carried out a straight forward factor analysis study of the old form of the WVI, which was originally developed by Super and Overstreet (1960) for the Career Pattern Study. They identified six primary factors which they labeled: security-economic-material, social-artistic, work-condition and associate, heuristic-creative, achievement-prestige, and independence-variety. This pioneer study provided the factor structure of the WVI.

These six factors were later examined in relation to home atmosphere (Kinnane & Pable, 1962). Six hypotheses were tested against each of the six factors, and the researchers found significant relationships between the atmosphere at home and the development of the work values. Kinnane and Pable (1962) found, for instance, that the materialistic atmosphere in the family results in the development of security-economic-material work values.

These findings, though tentative, were interesting and bear direct implications to the present study, in that the present study explored the relationship between the SES and urban-rural residence of the subjects and their work values.

Using the present WVI form, Hendrix and Super (1968) identified only four factors, namely, material, goodness of life, self-expression, and behavior control. The difference in the number of factors between the O'Connor and Kinnane (1961) study and Hendrix and Super (1968) study may be due to: (a) The difference in the age of the subjects in both studies. In the former, college freshmen were used, while in the latter, Grade 10 boys and girls were the subjects. (b) The difference in the WVI forms. The former consisted of 89 statements, while the latter, 45.

Another study (Kinnane & Gaubinger, 1963) reported significant, though low, relationships between the WVI scales and those of the AVL. Hendrix and Super (1968) endorsed the above consistent relationships, thus providing evidence that the WVI is assessing what it purports to measure.

WVI and occupational choice. Only one study in the second category was found. The results of this study reported significant differences in the work values of people in different occupations (Carruther, 1968). Carruther hypothesized that people with different educational and professional pursuits will exhibit different work value structure. The hypothesis was supported. Carruther also indicated by that study that Super's WVI is a valid test for British subjects in the United Kingdom.

WVI with nonwhite ethnic groups. The third group comprised studies which examined the viability of Super's WVI across ethnic origins. Such studies are few in number, though (Bernstein, 1968; Humbert, 1966;). Yet, they have provided evidence that the WVI is a viable instrument.

Administering the WVI to a group of negroes, Peurto Ricans, and whites, Bernstein (1968) found the rank order of the work values for the Peurto Ricans and the negroes is significantly different from that of the whites. He concluded on the basis of this difference that the ethnic background of the subjects did influence work values that one held.

Such a conclusion appears reasonable. But it may not be correct because the conclusion was based on the responses from 30 boys.

Humbert (1966) examined the work value patterns of 104 rural and urban, male and female welfare students from families in New Mexico. He found that the work value patterns of the rural students were significantly different from those students of the urban area. But because the size of the sample was small, and when distributed over four categories, it became smaller, one needs to be cautious about accepting the conclusion.

The review of the above literature provides some evidence that the WVI is a valid instrument. It also shows that family background, ethnic origin, and urban-rural setting are important socio-cultural factors in the development of the work values of the individual. Yet, the evidence for the above indications is relatively insufficient. Questions like: "Would the WVI be valid for Malaysian students?" are asked in the present study. Would the SES of the individual affect the work value patterns of the individual? Would urban-rural settings influence the work values of the individuals in the present study?

Socio-Economic Status and Vocational Preference

There is a vast amount of literature that shows the relationship between the SES and one's vocational interests, preferences, or choices (Bain, 1970; Breton, 1971; Sewell, 1963, 1964; Sewell & Shah, 1967; Siemens, 1965; Vigod, 1972). At the time of the study, there was no universal definition of the SES available. Each investigator would either formulate a definition for the SES (Blishen, 1968; Reutens, 1967; Sewell & Shah, 1967; Vigod, 1972) or borrow one that suited the purpose of the research.

Blishen (1968) used education, occupation, and income of the head of the household to develop his--Blishen's socio-economic index. Sewell and Shah (1968), in determining the SES, employed a weighted combination of father's occupation, father's formal educational level, an estimate of funds the family could provide if the student were to attend college, the degree of sacrifice this would entail for the family, and the approximate wealth and income of the students' family. Vigod (1972) used parental occupations to estimate the SES of the individual. Similarly, Reutens (1967). In Malaysia, the Drop-out Study, conducted by the Ministry of Education (1971), defined the SES in terms of the occupation, the highest level of education, and the property index of the head of the household.

Each of the above ways of defining the SES has its own strengths and weaknesses. The choice of a particular scale is dependent upon the population under study. Blishen's scale has been shown to be a reliable scale for assessing the SES of the Canadian population (Blishen, 1968), and the Malaysian scale has proved its reliability in the 1971 Drop-out Study (Ministry of Education, 1971).

Several studies in the late 1950's employed the SES as a sociological factor in studying vocational preference or choice (Jenson & Kirchner, 1955; Newcomb, 1958; Sewell, Haller, & Strauss, 1957). The bulk of these studies, with the exception of the one conducted by Newcomb (1958), suggests that the SES was an influential factor in determining the vocational preferences of the subjects involved in these studies.

Newcomb (1958), in the Bennington College Study, found that the SES had no influence on the occupational images of the subjects. The assumption that the low SES subjects would have more occupational images of low level occupations, and vice versa for the high SES subjects, was not found. Presumably in this study, the college-bound students have introjected the attitudes of the norm group with which they will be associated.

The studies which were conducted in the 1960's (Banducci, 1968; Ellis & Lane, 1966; Reutens, 1967; Sewell, 1964; Sewell & Shah, 1967; Smelser, 1963) lend further support to the general observation in the 1950's that the SES is positively related to the vocational preference. In all the above studies, a high positive relationship between the SES of the subjects and the occupational aspiration, preference, or choice was found. It may be concluded that, in general, the SES does have an influence on the vocational behavior. Yet, there was a study which fell out of step of the general observation. O'Dowd and Beardslee (1960) found that with the sample they were studying, the assumption that occupational images of occupation that one has are related positively to one's SES level was not true.

To illustrate the positive relationships between the SES and the occupational interests, preferences, or choice, a few studies will be described.

Employing 679 Grade 12 students, Banducci (1968) examined the accuracy of occupational stereotypes in relation to the SES, academic development, crystallization of plans, and range of experience. This researcher found that the subjects who came from the low SES groups had accurate occupational stereotypes of low level jobs, due to their limited occupational exposure and experience. The SES had a limiting effect on this group of participants.

The findings recorded by Ellis and Lane (1966) from their study show that lower status individuals contemplated careers in professional and managerial occupations to a lesser degree than do the upper and middle class status persons.

In the 1970's, it was also observed that the SES was still an influential sociological factor in spite of the social changes taking place.

Schoenfield (1972), who investigated the relationship between the parental status and the time when career decision was made, hypothesized that subjects with low status parents would make their career decisions earlier than those with high status parents. The rationale of this researcher was that economic pressure would be greater for the low status group. This researcher found that, among 4,886 graduating seniors from 23 colleges and universities, the hypothesis established for the research was supported.

Studies which provided similar results have been reported by Baldock (1971), Brown (1973), Vigod (1972), and White and Knight (1973).

In the Vigod study, the vocational behavior of 574 elementary and junior high school children from a range of SES levels were investigated. The four hypotheses established for this study were:

1. The higher the child's SES, the higher is his expected occupation.

2. The SES will be more highly correlated with "expected" occupation than with "wished" occupation.

3. The SES will be negatively correlated with the discrepancy

between "expected" and "wished" occupation.

4. All the above relationships will be stronger for older children.

Vigod (1972) found that all four hypotheses were supported, but the coefficient correlations were smaller among the girls than the boys.

Shaycroft (1973) examined the effect of the SES on the ability to graduate. This researcher observed that 83% of the graduating males and 85% of the females in the top intervals on the SES graduated from college, whereas the corresponding figure for their counterparts in the middle interval on the SES was only 63% males and 53% females. From those results, Shaycroft concluded that the SES seems to be a handicap for both sexes in respect to their ability to graduate from college.

The review of the literature from the last three decades has shown that the SES is related to vocational behavior of the individual in the positive way. There are studies which give support to an opposite point of view. In light of this lack of complete agreement in the studies quoted thus far, one would raise questions like: Would the SES have an influence on the vocational interest patterns and work value patterns of the Canadian and the Malaysian students? Would such an influence be observable across urban-rural boundaries? If it would, then one would expect different factor structure on vocational interests and work values of the urban and rural subjects.

These questions are raised with the knowledge that studies of this kind in Canada and Malaysia are still very few in number (Siemens, 1965).

Urban-Rural Residence and Vocational Preference

There is a vast amount of literature that shows the significant role or influence of urban-rural residence on the development of vocational interests, aspirations, preferences, or choices (Baldock, 1971; Haller & Sewell, 1967; Nelson, 1973; Sewell, 1964; Sewell & Ornstein, 1965). Two extensive reviews of such literature have been prepared by Burchinal (1962) and Sewell (1963).

Some of the studies which will be reviewed will show the aptness of Schwarzeller's remark:

> It is observed, almost consistently, that farm youth and youngsters reared in the rural villages and small towns are less likely to want a college education, or to aim toward the more prestigeful, higher status occupation, or to attain eventually the higher levels of socio-economic success and elite position in society than are youth reared in larger, more urban communities. (Schwarzeller, 1968, p. 47)

One of the earlier studies that fitted into the above category is the Wisconsin Study conducted by Sewell et al., (1957). In this study, a state-wide sample of 10,322 Wisconsin high school seniors were asked about their educational-vocational aspirations or plans. One of the results of this study shows that 37% of the students from farms and 44% of those from villages planned to further their education. In comparison, 50% of those from the city held the aspiration to continue their education.

In another state-wide study, Grigg and Middleton (1960) examined the occupational aspirations of the Grade 9 boys in Florida. These researchers found that the occupational aspirations of students in cities with a population greater than 25,000 were higher than those of the students in small rural communities.

In the same year, Schwarzeller (1960) compared the occupational aspirations of farm and nonfarm boys. He found that the former had lower occupational aspirations than the latter. Findings from this study provide additional support to the earlier findings.

Such consistent results were also reported by Burchinal (1961), Sewell and Ornstein (1965), and Slocum (1959).

One plausible explanation for the similarity in the relationship observed in the above studies was suggested much earlier by Lipset (1955), who hypothesized that occupational aspirations are the product of familiarity with the occupational structure of the community.

However, with technological progress, social changes, and occupational mobility, the trend has shifted somewhat. The change in the trend is evident from the results of the studies conducted by Dale and Miller (1972), Nelson (1973), and Schwarzeller (1968, 1973).

Schwarzeller (1968) explored the problem of whether or not the degree of rurality of community of residence affects career choice of Germany's young people. This researcher hypothesized that it would. Employing 445 boys and 385 girls from secondary, and 882 boys and 744 girls from elementary schools in three regions of West Germany, he investigated their educational-vocational aspirations or plans. He found that rurality had little effect on the career choice of the secondary school students or on the educational choice of the elementary school pupils.

In a later study, Schwarzeller (1973) extended his earlier study by comparing the influence of regional circumstances on the educational-vocational plans of rural youth in three modern, industrial countries. The population consisted of high school seniors in four areas of Kentucky and West Virginia (United States), ungdomskole ed gymnas seniors in three areas of Norway, and volksschule seniors and gymnasium students in three areas of Germany. Some of the findings of this study were: urban youth were more inclined to further their education than were rural youth. This finding held moderately strong in the American case. In Norway, for the boys and girls at ungdomskole level and for the girls at gymnas level, the same was true. But the place of residence had little effect on the plans of Norwegian gymnas boys. In Germany, the effect was negligible.

In light of the contradictory results produced by the above studies, one would raise questions like: Would rural-urban residence still exert its influence on the vocational preference of high school boys?

Studies by Baldock (1971); Borude, Rajkarne, and de Souza (1972); Dale and Miller (1973); and Nelson (1973) have all shown that rural-urban residence is not a significant factor in educational-vocational preference or choice, yet Schwarzeller (1973) has produced mixed results.

Baldock (1971) examined the vocational aspirations and abilities of 3,773 14-year-old high school boys in New Zealand. He posed two problems: (a) Do farm boys aspiring to farm work differ in educational aspiration and abilities from farm boys opting to a professional career or for the blue-collar and lower white-collar work? (b) Do differences occur between farm and nonfarm boys, especially those from a low-status home, as to the vocational aspiration and abilities? The educational aspiration and abilities of both farm and nonfarm boys opting for farming, lower white-collar work, or blue-collar work were found to be very similar. This similarity suggests that rural residence is not a handicap to rural youth in their educational-vocational aspirations.

The above studies seem to suggest that rural-urban residence is losing its influence on the vocational aspiration, preference, or choice of youth. If the place of residence is no longer influential on the vocational plans of youth, then one would expect the vocational interest and work value patterns of the urban students in this study to be similar to those in the rural. Perhaps a situation like this may be true in a developed country like Canada. Would the same situation be true for a developing country like Malaysia? These are some of the questions this study will attempt to answer.

Problem

The present study was designed to investigate some of the questions raised in the review of the literature. Of primary interest is the question of the construct validity of the VPI and the WVI for use with the Form IV Malaysian students.

More specifically, would the VPI and the WVI factor structure for the Malaysian students correspond to the VPI and WVI factor structure for the Canadian Grade 10 students? From the review of the literature and the precautions taken to select culture-reduced tests, it was expected that these factor structures would be the same.

A second question relates to the influence of the SES of the subjects on their work values and vocational interests. The literature review showed that SES is an influential sociological factor. It has shown that people with the same SES level tend to value similar patterns of work values and to have similar patterns of vocational interests. It was anticipated that the Malaysian and Canadian subjects from the same SES level would possess significantly different work value and vocational interest patterns from those in another SES level. However, the Malaysian and Canadian subjects of equal social standing would not differ in their work value and vocational interest patterns.

The review of the literature has also provided some evidence that people within the urban setting tend to have different sets of work values and interests from those in the rural setting. It was anticipated that Canadian and Malaysian students in the urban areas would have similar work value and interest patterns. Likewise, the Malaysian and Canadian students in the rural areas. However, the Canadian and Malaysian boys in the rural setting would be expected to possess different work values and vocational interests from their urban counterparts.

In addition, this study will also examine the viability of Holland et al.'s (1969) hexagonal model for the Canadian and Malaysian boys.

Finally, the VPI and WVI scale correlations will be examined to see if the two tests are independent of each other to provide some evidence of construct validity of the two tests for the Malaysian boys.

CHAPTER II

Research Instruments, Sampling and Data Collection, and Design

Research Instruments

Three research tools were employed in this study: a questionnaire, the modified form of the VPI, and the WVI.

Two sets of questionnaire (Appendix A and Appendix B) were prepared--one for the Canadian group, and the other for the Malaysian group.

Canadian questionnaire. The questionnaire (Appendix A) for the Canadian boys asked for information about the subject, his education, and his family. The assignment of each individual to a particular SES--high (level one), medium (level two), or low (level three)--was made on the basis of Blishen's socio-economic index (Blishen, 1968). The scale has a value range from 25.36 to 76.69. It was arbitrarily decided that those occupations with the socio-economic index value of 60.00 and above would be categorized as high SES, those below 29.99, low SES. Those occupations with values that lie between 30.00 and 59.99 were categorized as medium SES group.

The underlying rationale for the arbitrary cut-off points was decided from the percentage distribution of the Canadian labour force and provincial labour force for Alberta by socio-economic index (Blishen, 1968).

Malaysian questionnaire. The questionnaire for the Malaysian boys (Appendix B) consisted of two parts. The first part gathered information about the subject, his education, and his family. The second part collected data pertaining to his SES.

Items measuring the SES included the occupation of the head of the household, the highest educational level attained by the head of the household, and a count of a number of selected objects owned by the family. The objects were a motorcar, motorcycle, bicycle, air conditioning, telephone, refrigerator, electric fan, radio, sewing machine, television, boat with motor, and boat without motor.

Points were given for the occupation of the head of the household, his educational level, and his material possessions (Appendix C). The summation of these points constituted the SES scale. The higher the points a person received, the higher would be the SES level, and conversely, the lower the points, the lower the SES level. With this index, a person could be placed in one of the following three categories: high SES (level one), medium SES (level two), or low SES (level three).

For example, a person who has a university education, holds a high-status job and earns a high salary or income, and leads a comfortable life would be placed on a high SES position relative to others. A person who has little or no education, earns very little, and leads a difficult life would be placed on a low SES, and so on.

The cut-off points were: scores above 8 points were considered high SES, scores below 3 points were considered low SES, and scores between 4 and 7, medium SES (Appendix C).

The modified form of the VPI. The original VPI consists of occupational titles derived from the American labour force. To achieve conceptual equivalence, comparability of stimulus, and definitional equivalence, it was necessary to modify some of the occupational titles so that they would correspond to the occupational titles found in Canada and in Malaysia. Table 4 shows the original titles and the changes that were made.

To assist the researcher in making these modifications, the Canadian Classification and Dictionary of Occupations (1971-73) and the Malaysian Dictionary of Occupational Classification (1969) were used. The modified VPI for the Canadian and Malaysian students can be found in Appendix D and Appendix E respectively.

The WVI. The WVI in its original form was used for the Canadian students. For the Malaysian students, this instrument was translated into Bahasa Malaysian. Appendix F contains a copy of the translated version of the WVI.

Evaluating the suitability of the WVI for cross-cultural studies, the researcher observed that the 15 work values assessed by the WVI were conceptually salient to the Malaysian culture. The lin-

Table 4

Modification of VPI Occupational Titles to
Correspond to the Canadian and Malaysian Titles

Item No.	Original Title	Canadian Title	Malaysian Title
1	Aviator	Airplane pilot	Pilot
11	Airplane mechanic	-[1]	Aeroplane mechanic
19	Nursery school teacher	-	Kindergarten school teacher
21	Fish and Wildlife Specialist	Fish and Game Specialist	-
23	High school teacher	-	Secondary school teacher
27	Wrecker (Building)	Wrecker and Salvage Man	-
29	Elementary school teacher	-	Primary school teacher
34	Budget reviewer	Budget clerk	-
90	Truck gardener	Truck farmer	-
108	Prosecuting attorney	-	Public Prosecutor
113	Ass't city school superintendent	-	Ass't school supervisor
115	Real estate salesman	-	Property salesman
124	Cost estimator	Cost estimating clerk	-
160	Masseur	Masseur or massager	-

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[1] Blank space implies the retention of the original titles.

guistic equivalence was readily achieved through bilingual translation, back-translation, and preliminary try-outs. Bilingual translation and back-translation of the WVI was made with the help of the Coordinator of the Language Centre, University of Science of Malaysia, Penang, Malaysia. Several try-outs were conducted with the Malaysian students in the University of Alberta, Edmonton. The Likert-type response format of the WVI reduces the equivalence of measurement problem, in that it has avoided open-ended responses and limited the possible range of response to 5.

Sampling and Data Collection

The subjects chosen for the study comprised Grade 10 boys in the Canadian high schools, and the Form IV boys in the Malaysian secondary schools in Penang. Form IV in the Malaysian secondary schools is equivalent to Grade 10 in the Canadian high schools.

Canadian sample. The subjects from Canada comprised boys from one high school in the Edmonton Public School System (EPSS), two in the Edmonton Separate School System (ESSS), and three in the County of Parkland.

Table 5 provides the breakdown of the Canadian subjects by residence (rural-urban), socio-economic status, and tests.

Mode of data collection in Canada. Prior to deciding which schools were to be included in the study, the investigator consulted the personnel from the EPSS and the ESSS, as well as the person-

Table 5

Distribution of Canadian Subjects by Residence, SES, and Tests

Residence	Test	Socio-economic status			Total
		High	Medium	Low	
Rural	VPI	10	127	21	158
	WVI	10	127	21	158
Urban	VPI	67	183	64	314
	WVI	67	182	65	314

nel in the Department of Education in the County of Parkland. Permission to conduct the study in two schools in the EPSS, two in the ESSS, and three in the County of Parkland was sought.

Permissive approval was received from all seven schools. Arrangement was then made to meet the principals of the schools to further explain the project. Six of the seven schools agreed to participate after the discussion, and arrangements were then made to carry out the survey in each school.

The three instruments were stapled together to make up a set of research instruments for distribution to the boys.

In each class visited, the researcher explained to the boys the purpose of the study, the confidential nature of the study, and the willingness of the researcher to return to each school to interpret to those interested the scores made by them on the VPI and the WVI.

In all the schools except one school in the ESSS, the participants were told that they could fill in these sets at home and bring them back the next day. In one school, the principal and the teachers agreed to allow the boys to use their class time to fill out the sets.

All the usable returns were included in the study. A usable test was one that was completely filled out.

Malaysian sample. The subjects from Malaysia consisted of boys from nine Malay medium secondary schools in the State of Penang, three of which were urban schools and six rural, and 15 English medium secondary schools in the same state, nine of which were urban and six rural.

In the Malay medium secondary school, Malay language or Bahasa Malaysia (the official language of Malaysia) as it is now known, is used as the primary medium of instruction. English language is taught as a subject. In the English medium secondary school, the situation is reversed.

Table 6 provides the breakdown of the sample by SES, residence, and tests.

Mode of data collection. In Malaysia, permission to conduct any study in schools has to be obtained from the Educational Planning and Research Division of the Ministry of Education.

The permission was sought and given. Arrangement was made with the State of Penang Department of Education to carry out the study in 24 schools in the State of Penang. All the principals and teachers in the schools involved gave their consent.

Four data collectors were given instructions on the manner the data were to be collected. Standardized instruction (Appendix G) was provided to each. No problem was reported concerning data collection.

When all the data had been collected, the procedure of sampling

Table 6

Distribution of Malaysian Subjects by

SES, Residence, and Tests

Residence	Test	Socio-economic status			Total
		High	Medium	Low	
Rural	VPI	16	96	63	175
	WVI	15	96	61	172
Urban	VPI	102	237	99	438
	WVI	102	235	98	435

called post selection (Moser & Katton, 1971) had to be employed to reduce the number of the sample to about a third from each school. Then, counting from the top of each pile, every third set was selected to form the sample.

Post selection was necessary for practical reasons:

1. It was more convenient and practical for the data collectors to administer the set to all the boys in Form IV in all the schools.

2. It would reduce the burden on the principal of the school and classroom teacher, in that there was no necessity to pick out some boys for the test and eliminate the rest. In other words, a block of time could be assigned to the data collectors and they could use that time for data collection. There should be no wastage of time.

3. The size of the total population does permit the inclusion of every subject in the survey.

4. Arrangement in (2) above ensures closer cooperation from the schools and the subjects.

Design

The raw scores from the 11 scales of the VPI and the 15 scales of the WVI were factor analyzed by (a) ethnic groups--Canadians and Malaysians, (b) setting for each group--urban-rural Canadians and urban-rural Malaysians, and (c) socio-economic status for each group in each setting.

- Level 1	Urban Canadian	Urban Malaysian
Level 2	Urban Canadian	Urban Malaysian
Level 3	Urban Canadian	Urban Malaysian
- Level 1	Rural Canadian	Rural Malaysian
Level 2	Rural Canadian	Rural Malaysian
Level 3	Rural Canadian	Rural Malaysian

Principal components analysis was used with varimax rotation (1958) to achieve factor structure for each of the above groups.

In addition, the distance between each of the above scales: realistic (R), investigative (I), social (S), conventional (C), enterprising (E), and artistic (A) was computed using:

$$d(XY) = \left[\sum_{i=1}^{N} (a_{xi} - a_{yi})^2 \right]^{\frac{1}{2}}$$

where d(XY) is the distance from point X to point Y, and a_{xi} is the loading of variable x on factor i. Fifty-four comparisons were made between the adjacent pairs--realistic-investigative (RI), investigative-artistic (IA), artistic-social (AS), social-enterprising (SE), enterprising-conventional (EC), conventional-realistic (CR)--and the alternate pairs--realistic-artistic (RA), artistic-enterprising (AE), enterprising-realistic (ER), investigative-social (IS), social-conventional (SC), conventional-investigative (CI), and between the alternate pairs and the opposite pairs--investigative-enterprising (IE), realistic-social (RS), conventional-artistic (CA)--of the hexagonal model to examine the hypothesis that the distances between the opposite pairs are greater than the distances between the alternate pairs, and the distances between the alternate pairs are greater than the distances of the adjacent pairs.

Finally, a Pearson product-moment correlation between the 11 scales of the VPI and the 15 scales of the WVI was computed separately for the Canadian and the Malaysian boys. A comparison of the correlation matrix of the Canadian boys with that of the Malaysian boys was made to examine the pattern of the correlations.

CHAPTER III

Results

The raw scores from the 11 scales of the VPI and the 15 scales of the WVI were analyzed by the principal components analysis (PCA) and rotated by Kaiser's varimax method of rotation (1958) to obtain the best simple factor structure of the VPI and the WVI for the Canadian and Malaysian boys. All factors with eigenvalues greater than unity were extracted.

The results of the analyses for each test--the VPI and the WVI--will be reported separately under three headings: (a) the identified factors for both the Canadian and the Malaysian boys; (b) the comparison of factor structure on the VPI and the WVI between the Canadian and Malaysian boys; and (c) the comparison of the factor structure on the VPI and the WVI within each group--Canadian and Malaysian boys.

Reports on the VPI will precede those on the WVI.

VPI Factors for the Canadian and Malaysian Boys

Nine separate PCA were calculated for each group on the basis of ethnic background (Canadian and Malaysian), place of residence (rural-urban), and SES (high, medium, low). Only eight results could be used. The data from the SES level one rural Canadian boys (RC1) and the SES level one rural Malaysian boys (RM1) could not be utilized due to small sample size (N = 10; N = 16 respectively). For the purposes of the analysis and interpretation, salients were defined as those variables whose loadings on components were 0.400 or greater.

Wakefield and Doughtie's (1973) VPI factor structure (Appendix H) and Yom et al.'s (1975) VPI factor classification were used as aids in interpreting the various factor structures found in the present study. A summary of the factors that resulted from the 16 different analyses is shown in Table 7. Although each pair of analyses will be described in detail later, it is clear from Table 7 that the vocational interest, status and self-confidence factors pervade all groups with only a few exceptions.

In the subsequent discussion, the VPI factor structures for the Canadian and Malaysian boys will be elaborated. Complete tables of the matrices are provided in Appendix I.

VPI Factors and Factor Loadings for Canadian and Malaysian Boys

Four factors were identified for the Canadian group, and three factors were found in the Malaysian group (Table 8). For both groups, factor one was found to be the vocational interest factor. Although the Canadian sample did not have a high loading for the investigative scale, the overall similarity is high. The high loading on the acquiescence scale, suggesting a conventional view of the vocational world, indicates that the factor is similar in some

Table 7

VPI Factor Structure for the Canadian and Malaysian Boys Across Urban-Rural Settings and SES Levels

Factor Group	N	Vocational Interest	Status	Self-Confidence	Masculinity	Artistic
C	472	✓	✓	✓	✓	
M	613	✓	✓	✓		
RC	158	✓	✓	✓	✓	
RM	175	✓	✓	✓		
UC	314	✓	✓	✓	✓	
UM	438	✓	✓	✓		
RC2	127	✓	✓	✓	✓	
RM2	96	✓	✓	✓		
RC3*	21	✓	✓	✓	✓	
RM3	63	✓	✓	✓		✓
UC1	67	✓	✓	✓	✓	
UM1	102	✓	✓	✓	✓	
UC2	183	✓	✓ ⟷	✓	✓	
UM2	237	✓	✓	✓		
UC3	64	✓		✓	✓	
UM3	99	✓	✓	✓		

Note. C = Canadian; M = Malaysian; U = Urban; R = Rural; 1 = High SES; 2 = Medium SES; 3 = Low SES. Data on RC1 and RM1 are not included in this table due to small sample size.

*Results for RC3 are questionable because of small sample size.

✓ ⟷ ✓ indicates a combination of factors.

Table 8

VPI Factors and Factor Loadings for Canadian and Malaysian Boys

Factor	VPI Scale	Factor Loadings	
		Canadian	Malaysian
Vocational Interest	R	0.505	0.776
	I	(0.366)	0.575
	S	0.742	0.857
	C	0.770	0.852
	E	0.818	0.844
	A	0.607	0.695
	AC	0.791	0.859
Status	R	-0.590	-
	SC	0.742	0.678
	M	-	0.807
	ST	0.853	0.773
Self-Confidence (-)	I	-0.667	-0.601
	SC	0.433	0.457
	IN	0.864	0.865
Masculinity	R	0.428	-
	M	0.891	-

Note. R = Realistic; I = Investigative; S = Social; C = Conventional; E = Enterprising; A = Artistic; AC = Acquiescence; SC = Self-Control; M = Masculinity; ST = Status; IN = Infrequency. Can (N = 472), Mal (N = 613). ( ) = values close to 0.400.

respect to the Wakefield and Doughtie conventional-economic factor. Indeed, the combination of the Wakefield and Doughtie conventional-economic and material world factors is very similar to the vocational interest factor found here (excepting the artistic scale).

The second factor--status--is also found in both samples. The core scales for this factor are the self-control and status scales. For the Malaysian sample, the masculinity scale also has a high loading, perhaps arising from the Malaysian occupational stereotypes in which the males generally have high status positions. The negative loading on the realistic scale for the Canadian boys is consistent with the traditional Canadian view that manual positions are low status positions. The status factor for the Canadian sample is in close agreement with that of the Wakefield and Doughtie status factor.

Factor three, which has been labeled self-confidence, is an amalgam of positive loadings on the infrequency and self-control scales, and negative loading on the investigative scale. The appropriateness of this label will be seen if the above loadings are reflected. In many respects, this factor is similar to Wakefield and Doughtie's social desirability factor (reflected), but the term self-confidence seems to describe more appropriately the combination of positive self-evaluation, lack of inhibition, and the investigative personality type. There is a certain sense of impulsivity, suggesting perhaps some overconfidence.

Factor four--masculinity--occurs only with the Canadian boys. This may be because of recent societal trends in North America, which have questioned the traditional sex typing, and may have made the students more aware of this aspect of the vocational interest. It may be that, in Malaysia, the masculinity-femininity roles are more integrated with the value structure, whereas in Canada, the masculinity-femininity role is now viewed in isolation.

VPI Factors and Factor Loadings for Rural Canadian and Malaysian Boys

Four factors were identified for the rural Canadian boys: vocational interest, status, masculinity, and self-confidence. For the Malaysian boys, three factors were identified: vocational interest, status, and self-confidence (Table 9).

The vocational interest factor and the status factor for both rural groups are the same as the vocational interest and status factors described for the total group. For the rural Malaysian boys, the self-confidence factor is the same as in the total group. In the rural Canadian group, the loadings for the investigative and self-control scales just fail to reach the criterion cutoff. Nevertheless, they are high enough to indicate that the factor is essentially of the same construction as previously described.

Once again, the masculinity factor occurred only with the

Table 9

VPI Factors and Factor Loadings

for Rural Canadian and Malaysian Boys

Factor	VPI Scale	Factor Loadings	
		Rural Canadian	Rural Malaysian
Vocational Interest	R	0.448	0.814
	I	0.550	0.611
	S	0.777	0.865
	C	0.727	0.881
	E	0.799	0.857
	A	0.648	0.657
	AC	0.805	0.840
Status	R	-0.600	-
	SC	0.801	0.729
	M	-	0.842
	ST	0.846	0.821
Self-Confidence (-)	I	(-0.385)	-0.596
	SC	(0.370)	0.426
	IN	0.945	0.875
Masculinity	R	0.492	-
	I	0.432	-
	M	0.918	-

Note. R = Realistic; I = Investigative; S = Social; C = Conventional; E = Enterprising; A = Artistic; AC = Acquiescence; SC = Self-Control; M = Masculinity; ST = Status; IN = Infrequency. RC (*N* = 158); RM (*N* = 175).

Canadian boys.

VPI Factors and Factor Loadings for Urban Canadian and Malaysian Boys

Four factors were identified for the Canadian boys, namely, vocational interest, self-confidence, status, and masculinity; and three factors for the urban Malaysian boys: vocational interest, status, and self-confidence.

Table 10 shows the composition and factor loadings of each of the above factors for both groups.

The VPI factor structures for the urban samples are very similar to the structures identified for the total samples. Of course, more than two-thirds of the total sample is urban and, therefore, the similarity in the structure is to be expected. Again, as noted earlier, except for the masculinity factor, the structures are remarkably similar.

VPI Factors and Factor Loadings for Medium SES Rural Canadian and Malaysian Boys

Four factors for the medium SES Canadian boys and three for the medium SES Malaysian boys were identified for these two groups. The factors are: vocational interest, status, masculinity, and self-confidence for the Canadian boys; and vocational interest, status, and self-confidence for the Malaysian boys.

Table 10

VPI Factors and Factor Loadings

for Urban Canadian and Malaysian Boys

Factor	VPI Scale	Factor Loadings	
		Urban Canadian	Urban Malaysian
Vocational Interest	R	0.558	0.756
	I	(0.313)	0.561
	S	0.720	0.854
	C	0.790	0.839
	E	0.821	0.840
	A	0.582	0.713
	AC	0.782	0.866
Self-Confidence (-)	I	-0.684	-0.611
	SC	0.557	0.484
	IN	0.875	0.840
Status	R	-0.557	-
	SC	0.617	0.644
	M	-	0.804
	ST	0.877	0.728
Masculinity	R	(0.367)	-
	I	(0.328)	-
	A	-0.448	-
	M	0.877	-

Note. R = Realistic; I = Investigative; S = Social; C = Conventional; E = Enterprising; A = Artistic; AC = Acquiescence; SC = Self-Control; IN = Infrequency; M = Masculinity; ST = Status. UC (*N* = 314); UM (*N* = 438).

The factor composition and loadings are indicated in Table 11.

For the medium SES rural groups, the essential picture reemerges, except for the self-confidence factor. Although the salient scales are consistent with the previous analyses, the only strong loading occurs with the infrequency scale (reflected). Perhaps with the medium SES rural boys, the tendency to overconfidence suggested earlier does not occur. Also, because the number of the subjects is relatively small, the statistical instability may account for the lower values on the self-control and investigative scales.

VPI Factors and Factor Loadings for Low SES Rural Canadian and Malaysian Boys

The factors identified for the low SES rural Canadian boys are: vocational interest, masculinity, status, and self-confidence. For the corresponding Malaysian group, the factors are: vocational interest, status, self-confidence, and artistic.

The scales that make up these factors and their corresponding factor loadings are included in Table 12.

The analysis for the low SES rural groups shows a factor structure which is quite distinct from the previous results with a good deal of fractionation in the previously identified vocational interest factor. This is probably largely due to the small number (*N* = 21) of the Canadian boys at this level.

Table 11

VPI Factors and Factor Loadings for SES Level Two

Rural Canadian (RC2) and SES Level Two Rural Malaysian (RM2) Boys

Factor	VPI Scale	Factor Loadings	
		Rural Canadian 2	Rural Malaysian 2
Vocational Interest	R	0.529	0.799
	I	0.596	0.736
	S	0.772	0.884
	C	0.752	0.854
	E	0.801	0.838
	A	0.644	0.786
	AC	0.840	0.875
Status	R	-0.599	-
	SC	0.817	0.797
	M	-	0.807
	ST	0.844	0.829
Masculinity	R	(0.394)	-
	I	(0.364)	-
	M	0.941	-
Self-Confidence (-)	I	-	(-0.393)
	SC	(0.323)	-
	IN	0.955	0.926

Note. R = Realistic; I = Investigative; S = Social; C = Conventional; E = Enterprising; A = Artistic; AC = Acquiescence; SC = Self-Control; M = Masculinity; ST = Status; IN = Infrequency. RC2 (N = 127); RM2 (N = 96).

Table 12

VPI Factors and Factor Loadings for SES Level Three Rural Canadian (RC3) and SES Level Three Rural Malaysian (RM3) Boys

Factor	VPI Scale	Factor Loadings	
		Rural Canadian 3	Rural Malaysian 3
Vocational Interest	R	-	0.894
	I	-	0.412
	S	0.904	0.803
	C	0.873	0.917
	E	0.703	0.774
	A	0.681	-
	AC	0.547	0.706
Masculinity	R	0.854	-
	I	0.489	-
	M	0.792	-
	AC	0.642	-
Status	R	-0.420	-
	SC	0.847	0.678
	M	-	0.813
	ST	0.875	0.824
	IN	(0.361)	0.443

Table 12 (Continued)

Self-Confidence (-)	I	-0.749	-0.781
	E	0.418	-
	SC	(0.329)	0.513
	IN	0.822	0.725
	AC	-	-0.403
Artistic	E	-	0.425
	A	-	0.932

Note. R = Realistic; I = Investigative; S = Social; C = Conventional; E = Enterprising; A = Artistic; AC = Acquiescence; M = Masculinity; SC = Self-Control; ST = Status; IN = Infrequency. RC3 (N = 21); RM3 (N = 63).

However, in the Malaysian group, the basic agreement with the other results is maintained with the important addition of a factor composed of the artistic and the enterprising scales. This factor has been labeled the artistic factor. The negative loading of the masculinity scale on the factor (-0.306), although not reaching the criterion cutoff, suggests that this is the appropriate title, since rural lower class Malaysian females tend to produce handicrafts to assist family support.

VPI Factors and Factor Loadings for High SES Urban Canadian and Malaysian Boys

Four factors were obtained for each group. The factors are: vocational interest, status, masculinity, and self-confidence.

The scales that make up each factor and the corresponding factor loadings are shown in Table 13.

The vocational interest factor for the high SES urban Canadian boys is generally similar to the vocational interest factor previously described for the total group, except that the loadings on the investigative and social scales are lower. For the Malaysian group, this factor is the same as for the total group.

The status factor for the high SES urban Canadian boys does not have a high realistic scale loading, possibly because the high SES urban Canadian boys have little direct experience with manual occupations. The high masculinity scale loading raises some ques-

Table 13

VPI Factors and Factor Loadings for SES Level One Urban Canadian (UC1) and SES Level One Urban Malaysian (UM1) Boys

Factor	VPI Scale	Factor Loadings	
		Urban Canadian 1	Urban Malaysian 1
Vocational Interest	R	0.814	0.618
	I	-	0.495
	S	-	0.800
	C	0.731	0.798
	E	0.844	0.821
	A	0.610	0.739
	AC	0.694	0.878
Status	R	-	-0.591
	SC	0.759	-
	M	0.638	-
	ST	0.856	0.814
Self-Confidence (-)	I	-0.764	-0.419
	SC	0.439	0.781
	IN	0.789	0.888
Masculinity	R	-	(0.354)
	I	-	0.551
	S	-0.776	-
	M	0.552	0.846
	AC	-0.500	-

Note. R = Realistic; I = Investigative; S = Social; C = Conventional; E = Enterprising; A = Artistic; AC = Acquiescence; SC = Self-Control; M = Masculinity; ST = Status; IN = Infrequency. UC1 (*N* = 67); UM1 (*N* = 102).

tion.

For the Malaysian group, the status factor is unlike the previously described status factor for the total group. The status factor for this group has no loading for the self-control and masculinity scales.

The self-confidence factor is the same for both groups as previously described.

Finally, the masculinity factor emerges for the Malaysian group, with the accompanying loading on the traditional masculine field of science and mathematics. For the high SES Canadian boys, the presence of the masculinity factor appears to be tied to the technical competence rather than the manual competence. It may be that the manual competence is irrelevant.

VPI Factors and Factor Loadings for Medium SES Urban Canadian and Malaysian Boys

The vocational interest, self-confidence + status, and masculinity factors were identified for the SES level two urban Canadian group, and the vocational interest, status, and self-confidence factors for the corresponding Malaysian group.

The composition of each factor and the factor loadings for each scale are displayed in Table 14.

The vocational interest factor for the medium SES urban Canadian and Malaysian boys is generally similar to the vocational interest

Table 14

VPI Factors and Factor Loadings for SES Level Two Urban Canadian (UC2) and SES Level Two Urban Malaysian (UM2) Boys

Factor	VPI Scale	Factor Loadings	
		Urban Canadian 2	Urban Malaysian 2
Vocational Interest	R	0.400	0.776
	I	(0.395)	0.626
	S	0.788	0.870
	C	0.742	0.847
	E	0.768	0.855
	A	0.639	0.755
	ST	0.491	-
	AC	0.716	0.870
Status	R	-0.583	-
	I	-0.416	-
	SC	0.844	0.674
	M	-	0.818
	ST	0.666	0.748
	IN	0.719	-
Masculinity	R	0.430	-
	I	0.409	-
	A	-0.469	-
	M	0.870	-
	AC	0.437	-

Table 14 (Continued)

Self-Confidence (-)	I	-	-0.570
	SC	-	0.455
	IN	-	0.836

Note. R = Realistic; I = Investigative; S = Social; C = Conventional; E = Enterprising; A = Artistic; ST = Status; AC = Acquiescence; SC = Self-Control; M = Masculinity; IN = Infrequency.
UC2 (*N* = 183); UM2 (*N* = 237).

for the total group, except that the medium SES urban Canadian boys have within this factor a high loading for the status scale.

The status factor for the Canadian boys appears to be a combination of the scales making up the status and self-confidence factors, whereas the status factor for the Malaysian boys corresponds to that identified for the total Malaysian group. Similarly, it may be said of the self-confidence factor for the medium SES urban Malaysian boys.

For the medium SES urban Canadian boys, the masculinity factor has a negative loading on the artistic scale, and a positive loading on the realistic and investigative scales, as to be expected. The positive loading on the acquiescence scale is also consistent with the conventional notion about those people preferring masculine occupations.

VPI Factors and Factor Loadings for Low SES Urban Canadian and Malaysian Boys

Three factors were identified for each group: vocational interest, self-confidence, and masculinity for the SES level three urban Canadian boys; and vocational interest, status and self-confidence for the SES level three urban Malaysian boys.

The composition and factor loadings for each factor are shown in Table 15.

The vocational interest factor for both groups is generally

Table 15

VPI Factors and Factor Loadings for SES Level Three Urban Canadian (UC3) and SES Level Three Urban Malaysian (UM3) Boys

Factor	VPI Scale	Factor Loadings	
		Urban Canadian 3	Urban Malaysian 3
Vocational Interest	R	-	0.786
	I	0.436	0.605
	S	0.824	0.850
	C	0.719	0.820
	E	0.866	0.813
	A	0.711	0.574
	SC	-	-0.425
	ST	0.666	-
	AC	0.824	0.849
Self-Confidence (-)	R	(-0.389)	-
	I	-	(-0.329)
	SC	0.887	(0.380)
	IN	0.699	0.882
Masculinity	R	0.717	-
	I	0.606	-
	M	0.718	-
Status	SC	-	0.657
	M	-	0.676
	ST	-	0.796

Note. R = Realistic; I = Investigative; S = Social; C = Conventional; E = Enterprising; A = Artistic; SC = Self-Control; ST = Status; AC = Acquiescence; IN = Infrequency; M = Masculinity. UC3 (*N* = 64); UM3 (*N* = 99).

Table 15

VPI Factors and Factor Loadings for SES Level Three Urban Canadian (UC3) and SES Level Three Urban Malaysian (UM3) Boys

Factor	VPI Scale	Factor Loadings	
		Urban Canadian 3	Urban Malaysian 3
Vocational Interest	R	-	0.786
	I	0.436	0.605
	S	0.824	0.850
	C	0.719	0.820
	E	0.866	0.813
	A	0.711	0.574
	SC	-	-0.425
	ST	0.666	-
	AC	0.824	0.849
Self-Confidence (-)	R	(-0.389)	-
	I	-	(-0.329)
	SC	0.887	(0.380)
	IN	0.699	0.882
Masculinity	R	0.717	-
	I	0.606	-
	M	0.718	-
Status	SC	-	0.657
	M	-	0.676
	ST	-	0.796

Note. R = Realistic; I = Investigative; S = Social; C = Conventional; E = Enterprising; A = Artistic; SC = Self-Control; ST = Status; AC = Acquiescence; IN = Infrequency; M = Masculinity. UC3 (N = 64); UM3 (N = 99).

similar to the vocational factor for the total groups. The low SES urban Canadian boys, however, have a loading on the status scale, while the Malaysian boys have a negative loading on the self-control factor.

The status factor for the Malaysian boys is the same as previously identified for the Malaysian total group.

The self-confidence factor for both groups displays a trend in the structure, although the loading on the investigative scale for the Canadian boys and the loadings on the investigative and self-control scales are relatively lower than those found for the total groups.

The masculinity factor for the level three SES urban Canadian boys is similar to the masculinity factor for the total Canadian group. The loading on the investigative scale, however, is relatively high, though the trend in the loadings is the same.

VPI Factor Structure for Rural and Urban Canadian and Malaysian Boys

In the discussion that follows, reference is made to Table 7 and Appendix I, Tables 12 and 13.

Rural-urban Canadian boys. The number of the VPI factors that emerged for each group is similar in kind and degree. Both have four factors: vocational interest, status, self-confidence, and masculinity.

The vocational interest and status factors for the rural and urban Canadian boys are remarkably similar.

The self-confidence factor displays a relatively lower loading on the investigative and self-control scales which, as suggested earlier, may point to a lack of overconfidence among the rural Canadian boys.

As for the masculinity factor, the loadings on the realistic and investigative scales among the rural Canadian boys are relatively higher than those among the urban Canadian boys; yet the trend is similar. The negative loading on the artistic scale among the urban Canadian boys is relatively higher than that of the rural. In spite of these discrepancies in loadings, the trend is generally similar.

Rural-urban Malaysian boys. There is a very close similarity in the VPI structure of the rural Malaysian boys and that of the urban counterpart. Both groups have three common factors: vocational interest, status, and self-confidence.

The composition of each of these factors and the factor loadings of the variables making up the factor are almost identical.

VPI Factor Structure Across SES Levels for the Rural Canadian and Malaysian Boys

In the discussion that follows, reference is made to Table 7 and Appendix I, Tables I4 and I5.

Rural Canadian boys. The VPI factor structure for the SES level two rural Canadian boys shows a close resemblance, both in degree and in kind, to that of the SES level three rural Canadian boys.

Both have four common factors: vocational interest, status, self-confidence, and masculinity.

However, due to a small sample size for the SES level three rural Canadian boys (N = 21), the stability of the factors is questionable.

The vocational interest factor is generally similar for both groups, but for the SES level three rural Canadian boys, the loadings on the realistic and investigative scales are very low.

The status factor is remarkably similar for both groups.

The self-confidence factor displays some degree of discrepancy. The loadings on the investigative and enterprising scales are relatively lower for the SES level two group.

Similarly, it may be said of the masculinity factor.

Yet, the trend or pattern in the loadings of the scales making up these factors is similar.

Rural Malaysian boys. Between the SES level two rural Malaysian boys and the SES level three rural Malaysian boys, three factors were common: vocational interest, status, and self-confidence. They differ only with respect to the artistic factor which emerged among the SES level three group.

The vocational interest factor is very similar, except that for the SES level three, the loading on the artistic scale is very low for this factor. The loading for the artistic scale emerged within the artistic factor for the SES level three group.

The status factor is again very similar except that the loading on the infrequency scale among the SES level three group is relatively higher than that of the SES level two group.

The structure of the self-confidence factor is basically the same, but the loadings on the investigative scale and the self-control scale are relatively lower for the SES level two group. In addition, the SES level three has a relatively high negative loading on the acquiescence scale.

VPI Factor Structure Across SES Levels for the Urban Canadian and Malaysian Boys

Urban Canadian boys. As evidenced in Table 7, and Tables I6, I7, and I8 of Appendix I, the degree of similarity in the VPI structures across the three SES levels for the urban Canadian boys is relatively lower than previously noted for the other groups. Among them, they share two common factors: the vocational interest factor and the masculinity factor.

The SES level one urban Canadian boys have four factors: the vocational interest, status, self-confidence, and masculinity factors.

The SES level two group has three factors: the vocational interest, masculinity, and a combined factor of self-confidence and status.

The SES level three boys have three factors, namely, the vocational interest factor, the self-confidence factor, and the masculinity factor.

The composition of the vocational interest factor and the masculinity factor is generally similar. The composition of the self-confidence factor for the SES level one and level three is also close to being similar.

The self-confidence + status factor for the SES level two is about the only factor that has brought about a certain amount of discrepancy in the picture. As noted earlier, this factor is made up of scales that normally make up the self-confidence factor and the status factor.

Urban Malaysian boys. Closer similarity exists in the VPI structure of the Malaysian boys across the SES levels. All the three subgroups have in common the vocational interest, status, and self-confidence factors.

The composition of each of these factors, as evidenced in Tables I6, I7, and I8 of Appendix I, too, is closely similar.

The only difference noted is that the SES level one urban Malaysian boys have an additional factor, labeled the masculinity factor.

Summary

From the preceding discussion, it will be noted that the VPI factor structure for the Canadian boys resembles very closely that of the Malaysian counterpart, across place of residence and the SES levels.

Secondly, the VPI factor structure of the rural Canadian boys and that of the urban Canadian boys are very similar. A similar close resemblance is also evident in the comparison of the VPI structures between the rural and urban Malaysian boys.

Thirdly, for the rural Canadian and Malaysian boys, a similarity in the VPI factor structure across SES levels for each group is observed. However, the comparison of similar kind among the urban Canadian boys displays a relatively less similarity. With the urban Malaysian boys, the VPI structures across SES levels are very similar, except for the emergence of the masculinity factor among the SES level one group.

WVI Factors for the Canadian and Malaysian Boys

Nine separate PCA were carried out for each group on the basis of ethnic background (Canadian-Malaysian), place of residence (rural-urban), and SES levels (high, medium, low). Results from the SES level one rural Canadian and Malaysian boys were not used as the sample size was small (N = 10; N = 15 respectively). Similarly results from the SES level three rural Canadian were not used due to small sample size (N = 21).

Using Hendrix and Super's (1968, 1970) (Appendix J) WVI factor classification as aids in interpreting the WVI factors, a summary of the factors identified for the Canadian and Malaysian boys are presented in Table 16.

Although each pair of analyses will be described in detail later, it is clear from Table 16 that the material, self-expression and social relations and power and prestige factors pervade all groups with only a few exceptions.

In the subsequent discussion the factor structure of the WVI will be elaborated. Complete tables of factor matrices are given in Appendix K.

WVI Factors and Factor Loadings for the Canadian and Malaysian Boys

The WVI factor structure for the Canadian boys is made up of three factors: material, self-expression and social relations, and power and prestige. For the Malaysian boys, four factors were found in the WVI structure: the material, self-expression and social relations, power and prestige and esthetic factors.

As can be seen in Table 17, there is a very close resemblance in the composition of the material world and self-expression and social relations factors between these two groups.

Table 16

WVI Factor Structure Comparison Between the Canadian and Malaysian Boys

Factor Group	N	Material	Self-Expression and Social Relations	Power and Prestige	Esthetic Expression	Independence	Social Relations	Social Materialistic	Creativity	Non-Intellectual Esthetic Expression	Beauty and Surrounding	General Work Value I	General Work Value II
C	472	✓	✓	✓	-								
M	607	✓	✓	✓	✓								
RC	158	✓	✓	✓		✓	-						
RM	172	✓	-	✓		-	✓						
UC	314	-	✓	-	-							✓	
UM	435	✓	✓	✓	✓								
RC2	127	✓	✓	✓		✓	-		-				
RM2	96	✓	-	✓		-	✓		✓				
RM3	61	✓		✓		✓	✓						
UC1	67	-	✓	✓			✓	✓		✓	-		
UM1	102	✓	✓	✓			-	-		-	✓		
UC2	182	✓	✓	✓									
UM2	235	✓	✓	✓									
UC3	65	-	-	-	-							✓	✓
UM3	98	✓	✓	✓	✓							-	-

Note. C = Canadian; M = Malaysian; U = Urban; R = Rural, 1 = High SES; 2 = Medium SES; 3 = Low SES. Data on RC1, RC 3, and RM 1 is not shown above due to small sample size.

Table 17

WVI Factors and Factor Loadings for Canadian and Malaysian Boys

Factor	WVI Scale	Factor Loadings	
		Canadian	Malaysian
Material	AC	0.433	0.434
	SU	0.558	0.641
	SR	0.747	0.770
	WL	0.605	0.556
	SE	0.747	0.738
	AS	0.614	0.479
	ER	0.685	0.769
	AL	0.417	-
Self-Expression and Social Relations	CR	0.714	0.692
	AC	0.621	0.445
	AS	-	0.524
	ES	0.499	-
	AL	0.676	0.643
	IS	0.750	0.689
Power and Prestige	CR	0.465	-
	MA	0.710	0.743
	SU	0.469	-
	PR	0.633	0.744
	IN	0.696	0.701
	ER	0.494	-

Table 17 (Continued)

Esthetic Expression	ES	-	0.744
	VA	-	0.751

Note. AC = Achievement; SU = Surrounding; SR = Supervisory Relations; WL = Way of Life; SE = Security; AS = Associates; ER = Economic Return; AL = Altruism; CR = creativity; ES = Esthetic; IS = Intellectual Stimulation; MA = Management; PR = Prestige; IN = Independence; VA = Variety. Can (_N_ = 472); Mal (_N_ = 607).

In the Malaysian group, altruism does not load on this factor, but for the Canadian boys, altruism does not have its principal weight here either, even though 0.417 is above the criterion cut-off.

The self-expression and social relations factor has some social relations (altruism) in it.

The prestige and power factor loads highly on the prestige, independence and management scales for both groups. The Canadian boys however have loadings on the economic returns and creativity scale as well, although the latter loading is relatively lower than the loadings on the other scales. Perhaps, in Canada, power is closely associated with wealth. In Malaysia wealth is only partly related to power.

The esthetic expression factor has high loadings on the esthetic and variety scales. The loading for the creativity scale is relatively high too, although it is below the criterion cut-off.

VWI Factors and Factor Loadings for the Rural Canadian and Malaysian Boys

For the rural Canadian boys, four factors were identified: material, self-expression and social relations, power and prestige, and independence. For the Malaysian boys, three factors were identified: material, power and prestige, and social relations.

The composition of each factor and their corresponding factor loadings are displayed in Table 18.

Only the material factor showed a very high degree of similarity between the two groups. The power and prestige factor is similar with respect to high loadings on the management scale and the prestige scale. It does appear that the power and prestige factor for the Malaysian boys has scales which made up the independence factor for the Canadian group. Perhaps the rural Canadian boys see the farm life as having plenty of independence and variety, but little power and prestige. The Malaysian boys on the other hand, may have little variety and independence, and so come to associate independence and prestige with power and prestige. The three remaining factors are group specific.

The degree of similarity in the WVI factor structure between these two groups is relatively lower than that between the Canadian and Malaysian boys as a total group.

WVI Factors and Factor Loadings for the Urban Canadian and Malaysian Boys

Two factors emerged for the urban Canadian boys--general work value factor and self-expression and social relations, and four factors for the urban Malaysian boys--material, self expression and social relations, power and prestige, and esthetic expression.

Table 18

WVI Factors and Factor Loadings for

Rural Canadian and Malaysian Boys

Factor	WVI Scale	Factor Loadings	
		Rural Canadian	Rural Malaysian
Material	AC	-	0.422
	SU	0.402	0.702
	SR	0.635	0.626
	WL	0.588	0.545
	SE	0.673	0.779
	AS	0.687	-
	ER	0.512	0.832
Self-Expression and Social Relations	CR	0.667	-
	AC	0.645	-
	ES	0.513	-
	AL	0.736	-
	IS	0.676	-
Power and Prestige	CR	-	0.427
	MA	0.773	0.688
	AC	-	0.461
	SU	0.493	-
	WL	-	0.463
	ES	0.415	0.539
	PR	0.560	0.567

Table 18 (Continued)

Power and Prestige (Continued)	IN	-	0.712
	VA	-	0.639
	ER	0.486	-
Independence	WL	0.497	-
	IN	0.762	-
	VA	0.529	-
Social Relations	SR	-	0.485
	AS	-	0.738
	AL	-	0.715

Note. AC = Achievement; SU = Surrounding; SR = Supervisory Relations; WL = Way of Life; SE = Security; AS = Associates; ER = Economic Return; CR = Creativity; ES = Esthetic; AL = Altruism; IS = Intellectual Stimulation; MA = Management; PR = Prestige; IN = Independence; VA = Variety. RC (N = 158); RM (N = 172).

The factor structures for both groups are as presented in Table 19.

The general work value factor for the Canadian boys appears to have within it scales that make up the power and prestige and independence factors. The self-expression factor has within it scales that make up the esthetic factor. The Malaysian factors appear to be the same as that identified for the total Malaysian group. The power and prestige, and esthetic expression factors are found among the Malaysian boys only. These factors are closely similar to those identified for the total Malaysian group, except that the power and prestige factor has a loading of 0.412 on the way of life scale. Perhaps it is not unreasonable to expect one with power and prestige to be able to lead a life of his own choice.

The degree of similarity is reduced very much.

WVI Factors and Factor Loadings for Medium SES Rural Canadian and Malaysian Boys

Three factors were found among the medium SES rural Canadian boys: the self-expression and social relations, power and prestige, and material factors. For the Malaysian counterpart, five factors emerged: creativity, power and prestige, material, independence, and social relations. Their factor structures are shown in Table 20.

Table 19

WVI Factors and Factor Loadings for

Urban Canadian and Malaysian Boys

Factor	WVI Scale	Factor Loadings	
		Urban Canadian	Urban Malaysian
Material	AC	-	0.470
	SU	-	0.561
	SR	-	0.815
	WL	-	0.562
	SE	-	0.747
	AS	-	0.525
	ER	-	0.737
Self Expression and Social Relations	CR	0.800	0.752
	AC	0.671	0.480
	AS	0.400	0.473
	ES	0.514	-
	IN	0.481	-
	VA	0.499	-
	AL	0.611	0.553
	IS	0.778	0.750
Power and Prestige	MA	-	0.748
	WL	-	0.412
	PR	-	0.741
	IN	-	0.726

Table 19 (Continued)

Esthetic Expression	ES	-	0.745
	VA	-	0.785
General Work Value Factor 1	MA	0.546	-
	AC	0.478	-
	SU	0.727	-
	SR	0.679	-
	WL	0.627	-
	SE	0.779	-
	AS	0.556	-
	PR	0.664	-
	IN	0.513	-
	VA	0.446	-
	ER	0.862	-

Note. MA = Management; AC = Achievement; SU = Surrounding; SR = Supervisory Relations; WL = Way of Life; SE = Security; AS = Associates; PR = Prestige; IN = Independence; VA = Variety; ER = Economic Return; CR = Creativity; ES = Esthetic; AL = Altruism; IS = Intellectual Stimulation. UC (*N* = 314); UM (*N* = 435).

Table 20

WVI Factors and Factor Loadings for SES Level Two Rural Canadian (RC2) and SES Level Two Rural Malaysian (RM2) Boys

Factor	WVI Scale	Factor Loadings	
		Rural Canadian 2	Rural Malaysian 2
Self-Expression and Social Relations	CR	0.733	-
	AC	0.714	-
	ES	0.508	-
	AL	0.767	-
	IS	0.722	-
Power and Prestige	MA	0.785	0.692
	AC	-	0.595
	SU	0.584	-
	WL	-	0.686
	ES	-	0.565
	PR	0.615	0.608
	IN	-	0.674
	VA	-	0.693
	ER	0.630	-
	IS	-	0.483
Material	SU	0.419	0.695
	SR	0.658	0.701
	WL	0.511	0.428
	SE	0.618	0.776
	AS	0.654	-
	ER	0.400	0.856

Table 20 (Continued)

Independence	WL	0.599	-
	IN	0.757	-
Social Relations	SR	-	0.436
	AS	-	0.741
	AL	-	0.708
Creativity	CR	-	0.755
	PR	-	-0.534

Note. CR = Creativity; AC = Achievement; ES = Esthetic; PR = Prestige; MA = Management; SU = Surroundings; WL = Way of Life; IN = Independence; VA = Variety; ER = Economic Return; IS = Intellectual Stimulation; SR = Supervisory Relations; SE = Security; AS = Associates; AL = Altruism. RC 2 (*N* = 127); RM2 (*N* = 96).

The self-expression and social relations factor for the Canadian boys is the same as that for the total Canadian group. Similarly it can be said about the material factor. The prestige and power factor however has relatively lower loadings on creativity and independence.

For the Malaysian boys in this category, the material factor closely resembles that of the total group. They do not have the self-expression factor. Instead the creativity factor, with a high loading on creativity emerged. Perhaps the direct involvement of the rural Malaysians in handicrafts, and basketry, accounts for the emergence of this factor.

The power and prestige factor has within it the variables making up the esthetic factor. Perhaps for this group of the Malaysian people, esthetic expression invokes respect and bestows some power to those who have the esthetic abilities.

The material factor is most similar in kind and degree for the two groups.

The power and prestige factor for the SES level two rural Malaysian group consists of scales that make up the independence factor in the Canadian group. The factor structure is similar with respect to two variables only--management and prestige.

The independence and social relations factors are Canadian and Malaysian specific respectively.

To a large extent, the structures do not look quite similar.

WVI Factors and Factor Loadings for Low SES Rural Canadian and Malaysian Boys

The results for the SES level three rural Canadians were not used due to small sample size (N = 21).

Four factors emerged for the SES level three Malaysian boys, namely: the material, power and prestige, independence and social relations factors (Table 21).

The material factor resembles quite closely that of the total group, except that it does not load on associate. Instead it has a loading on intellectual stimulation. The loading on the intellectual stimulation may have resulted from the emphasis on better education for the rural people by the federal government of Malaysia. The need for associate is not great in the rural areas as the people there live in closely-knit villages.

The power and prestige factor have loadings on altruism and creativity, but these loadings are relatively low.

The social relations factor corresponds very closely that of the rural Malaysian boys as a whole.

WVI Factors and Factor Loadings for High SES Urban Canadian and Malaysian Boys

Five factors were identified for the SES level one urban Canadian boys. They are: self-expression and social relations,

Table 21

WVI Factors and Factor Loadings for SES Level Three

Rural Malaysian (RM3) Boys

Factor	WVI Scale	Factor Loadings
		Rural Malaysian 3
Material	AC	0.438
	SU	0.746
	SR	0.462
	WL	0.448
	SE	0.700
	ER	0.815
Power and Prestige	CR	0.407
	MA	0.730
	PR	0.772
	VA	0.422
	AL	0.411
Independence	WL	0.603
	ES	0.579
	IN	0.736
	VA	0.653
Social Relations	SR	0.702
	AS	0.815
	AL	0.669

Table 21 (Continued)

Note. AC = Achievement; SR = Supervisory Relations; WL = Way of Life; SE = Security; ES = Esthetic; IS = Intellectual Stimulation; SU = Surrounding; IN = Independence; ER = Economic Return; CR = Creativity; MA = Management; PR = Prestige; VA = Variety; AL = Altruism; AS = Associates. RM3 (*N* = 61).

social materialistic, social relations, power and prestige, and non-intellectual esthetic expression. Four factors for the corresponding Malaysian group are: material, self-expression and social relations, power and prestige, and beauty and surrounding.

Data in Table 22 display the composition of these factors and their factor loadings.

The self-expression and social relations factor for the SES level one Canadian boys have relatively low loadings on associate and altruism. These two scales emerged as a separate factor--the social relations factor. For the Malaysians, the associate and altruism variables were retained within the self-expression and social relations factor. Perhaps in the urban cities in Malaysia social distance is not so conspicuous as it is in the materialistic - individualistic society of developed countries like Canada, that boys in Canada feel that this aspect of work need to be sought in and from work to maintain social relationships.

The power and prestige factor looks more or less alike except that within the Canadian WVI structure, the power and prestige factor has a loading on security, while for the Malaysian structure, the power and prestige factor is loaded on independence.

The other remaining factors are specific to each group.

The social materialistic factor is thus named for its loadings on supervisory relations and way of life, security and achievement

Table 22

WVI Factors and Factor Loadings for SES Level One Urban Canadian (UC1) and SES Level One Urban Malaysian (UM1) Boys

Factor	WVI Scale	Factor Loadings	
		Urban Canadian 1	Urban Malaysian 1
Material	AC	-	0.553
	SU	-	0.519
	SR	-	0.749
	WL	-	0.726
	SE	-	0.758
	AS	-	0.440
	IN	-	0.436
	ER	-	0.707
	AL	-	0.457
Self-Expression and Social Relations	CR	0.830	0.762
	MA	-	0.402
	AC	0.550	0.438
	SU	0.406	-
	AS	-	0.570
	IN	0.637	-
	VA	0.539	-
	AL	-	0.482
	IS	0.667	0.808

Table 22 (Continued)

Social Materialistic	AC	0.575	-
	SR	0.751	-
	WL	0.730	-
	SE	0.443	-
Social Relations	AS	0.724	-
	AL	0.864	-
Power and Prestige	MA	0.801	0.780
	SU	0.635	-
	SE	0.636	-
	PR	0.731	0.729
	IN	-	0.610
	ER	0.853	0.439
Beauty and Surrounding	SU	-	0.634
	ES	-	0.614
	VA	-	0.811
Non-intellectual Esthetic Expression	ES	0.843	-
	IS	0.598	-

Note. MA = Management; AC = Achievement; SU = Surrounding; SR = Supervisory Relations; WL = Way of Life; SE = Security; AS = Associates; PR = Prestige; IN = Independence; ER = Economic Return; AL = Altruism; CR = Creativity; IS = Intellectual Stimulation; ES = Esthetic; VA = Variety. UC1 (*N* = 67); UM1 (*N* = 102).

scales. While the last three variables suggest concern for material world, the supervisory relations is indicative of social relationships.

The beauty and surrounding factor is in fact an extension of esthetic factor in which concern for the surrounding is included.

The non-intellectual esthetic factor is thus labeled because of its high positive loading on the esthetic variable and a high negative loading on the intellectual stimulation variable. The combination of the two variables suggests a bi-polar structure.

The overall similarity in the WVI structure for these groups of boys is minimal.

WVI Factors and Factor Loadings for Medium SES Urban Canadian and Malaysian Boys

The two groups have three same-named factors--material, power and prestige, and self-expression and social relations. The composition of each factor for both group displays close similarity (Table 23). To a large extent, the WVI factor structures for these groups of boys are similar. Except for the low loadings on the creativity and achievement scales for the power and prestige factor for the Malaysian boys, the two WVI structures are very close to being identical.

Table 23

WVI Factors and Factor Loadings for SES Level Two Urban Canadian (UC2) and SES Level Two Urban Malaysian (UM2) Boys

Factor	WVI Scale	Factor Loadings	
		Urban Canadian 2	Urban Malaysian 2
Material	AC	0.443	0.509
	SU	0.621	0.591
	SR	0.763	0.789
	WL	0.649	0.641
	SE	0.692	0.785
	AS	0.494	0.599
	ER	0.740	0.699
	AL	0.456	0.421
Power and Prestige	CR	0.622	-
	MA	0.690	0.628
	AC	0.405	-
	SU	0.635	0.402
	PR	0.729	0.719
	IN	0.690	0.637
	VA	0.433	0.582

Table 23 (Continued)

Self-Expression and Social Relations	CR	0.557	0.783
	AC	0.509	0.449
	AS	0.411	0.344
	ES	0.616	0.637
	AL	0.689	0.463
	IS	0.739	0.671

Note. AC = Achievement; SU = Surrounding; SR = Supervisory Relations; WL = Way of Life; SE = Security; AS = Associates; ER = Economic Return; AL = Altruism; CR = Creativity; MA = Management; PR = Prestige; IN = Independence; VA = Variety; ES = Esthetic; IS = Intellectual Stimulation. UC2 (_N_ = 182); UM2 (_N_ = 235).

WVI Factors and Factor Loadings for Low SES Urban Canadian and Malaysian Boys

Two factors were identified for the SES level three urban Canadian group--general work value I, and general work value II, while for their Malaysian counterpart, four factors emerged--material, power and prestige, esthetic expression, and self-expression and social relations (Table 24).

The factors for the Malaysian boys correspond to those factors identified earlier on for the total Malaysian group.

Two general work values factors emerged from the WVI structure for the SES level three urban Canadians.

The emergence of these general factors may be explained in terms of their basic needs (Maslow, 1954). Perhaps their work value system is still undefined and undifferentiated due to the pressure by other more immediate needs for urban city survival.

Overall, the similarity in the WVI structure for these groups appears minimal.

Summary

Of the seven comparisons made, only two are highly similar: between the Canadian and Malaysian boys as a total group, and between the SES level two urban Canadian and Malaysian boys.

In the other five WVI structures, the similarity between groups is minimally similar in kind and degree.

Table 24

WVI Factors and Factor Loadings for SES Level Three Urban Canadian (UC3) and SES Level Three Urban Malaysian (UM3) Boys

Factor	WVI Scale	Factor Loadings	
		Urban Canadian 3	Urban Malaysian 3
Material	AC	-	0.420
	SU	-	0.599
	SR	-	0.808
	WL	-	0.503
	SE	-	0.670
	AS	-	0.701
	ER	-	0.782
	AL	-	0.479
	IS	-	0.407
General Work Value I	AC	0.500	-
	SU	0.776	-
	SR	0.837	-
	WL	0.714	-
	SE	0.875	-
	AS	0.626	-
	ES	0.436	-
	PR	0.493	-
	IN	0.505	-
	VA	0.596	-
	ER	0.850	-
	AL	0.550	-

Table 24 (Continued)

Power and Prestige	MA	-	0.725
	WL	-	0.484
	PR	-	0.759
	IN	-	0.812
Esthetic Expression	ES	-	0.819
	VA	-	0.593
Self-Expression and Social Relations	CR	-	0.793
	AC	-	0.669
	AL	-	0.446
	IS	-	0.580
General Work Value II	CR	0.798	-
	MA	0.760	-
	AC	0.727	-
	SU	0.416	-
	WL	0.463	-
	AS	0.507	-
	ES	0.548	-
	PR	0.646	-
	IN	0.683	-
	VA	0.406	-
	AL	0.534	-
	IS	0.804	-

Table 24 (Continued)

Note. AC = Achievement; SU = Surrounding; SR = Supervisory Relations; WL = Way of Life, SE = Security; AS = Associates; ES = Esthetic; PR = Prestige; IN = Independence; VA = Variety; ER = Economic Return; AL = Altruism; IS = Intellectual Stimulation; CR = Creativity; MA = Management. UC3 (N = 65); UM3 (N = 98).

WVI Factor Structure for Rural and Urban Canadian and Malaysian Boys

In the discussion that follows, reference is made to Table 16 and Appendix K, Tables K2 and K3.

Rural-urban Canadian boys. The number of the WVI factors that emerged for each group is different: four for the rural Canadian boys, and two for the urban Canadian boys.

They share in common the self-expression and social relations factor only. The power and prestige, independence and material factors are specific to the rural Canadian boys only, while the general work value factor is specific to the urban boys only.

In addition, the variables making up the common factor are, to a large extent, dissimilar. The self-expression and social relations factor for the urban boys have within this factor variables that normally make up the independence factor.

Rural-urban Malaysian boys. Three WVI factors emerged for the rural Malaysian boys--material, power and prestige, and social relations, and four factors for the urban Malaysian boys--material, self-expression and social relations, power and prestige and esthetic expression.

The material factor is almost identical in kind and degree. The power and prestige factor is relatively similar. The rural group has within it variables that make up the esthetic expression factor.

The other factors are specific to each group: self-expression and social relations, and independence (rural), and social relations (urban).

WVI Factor Structure Across SES Levels for the Rural Canadian and Malaysian Boys

Reference is made to Table 16 and Appendix K, Tables 4 and 5 for the following discussion.

Rural Canadian boys. The WVI factor structure for SES level two was not compared with that for the SES level three rural Canadian boys due to the small sample size in the latter ($N = 21$) which probably accounts for statistical instability.

Rural Malaysian boys. The SES level two rural and SES level three rural Malaysian boys share three common factors: the material, power and prestige, and social relations factors.

The power and prestige factor is quite similar, except that the power and prestige factor for the SES level two rural Malaysian boys has within it the variables that make up the independence factor (management, prestige, independence, way of life).

One factor--creativity--is specific to the SES level two rural Malaysian boys, while independence is specific to the SES level three rural Malaysian boys.

WVI Factor Structure Across SES Levels for Urban Canadian and Malaysian Boys

In the discussion that follows, data in Table 16, and Appendix K, Tables 6 through 8 are used.

Urban Canadian boys. WVI factor for the SES level one and level two urban Canadian boys displays a wide discrepancy, both in kind and degree. The SES level one has five factors--self-expression and social relations, social materialistic, social relations, non-intellectual esthetic expression and power and prestige, while the SES level two has only three--material, power and prestige, and self-expression and social relations.

The similarity in the same-named factors--power and prestige, self-expression and social relations--is also minimal.

The SES level one has the social materialistic, social relations, and non-intellectual esthetic expression factors, while the SES level two has the material factor.

A greater amount of discrepancy in kind and degree is found across the three SES levels. The SES level three group has only two factors--general work value I and general work value II. These factors differ in their composition from those found in the SES level one or in the SES level two groups.

Urban Malaysian boys. The WVI factor structures across the SES levels for the urban Malaysian boys display similarity with respect to common factors--material, self-expression and social relations and power and prestige. The composition of these factors, too, display a close resemblance.

The only difference is that within the WVI factor structure for the SES level three esthetic expression factor is found. The esthetic expression among the SES level three is a manifestation of economic need. The level three boys make beautiful objects for sale to enhance their income.

Summary

The composition of the WVI factor structures across place of residence displays wide discrepancies for both the Canadian and Malaysian boys, suggesting that the place of residence may affect the development of work values.

Across the SES level for the rural Canadians, the similarity in the WVI structure in kind and degree is minimal, while for the corresponding Malaysian group, a greater resemblance is observed in their WVI structures, implying that for the Canadian boys in rural areas, SES has a role to play. It is not obvious, however, among the rural Malaysian boys.

For the urban Canadian boys, the discrepancies are more conspicuous across the SES levels. Not so, however, for the Malaysian counterparts. Similar inference as for the rural boys may be drawn.

Supplementary Analyses

Two supplementary analyses were carried out. One analysis calculated the distances between the adjacent pairs, alternate pairs, and opposite pairs of the VPI scales of the hexagon for the Canadian and Malaysian boys, using the rotated factor loadings as the values for the axes of the multidimensional common-factor space (Harman, 1967). The second analysis is a Pearson product-moment correlation between the 11 scales of the VPI and the 15 scales of the WVI for the Canadian and Malaysian boys.

In the first analysis, it was found that out of the 54 possible comparisons of the distance between the three types of distances, 36 of the comparisons were in the expected direction for the Canadian boys and 30 comparisons were in the expected direction for the Malaysian boys.

The data in Table 25 show the computed distances for both groups; data in Table 26 display these comparisons which were in the expected direction for both groups.

The Pearson product-moment correlations between the 11 scales of the VPI and the 15 scales of the WVI for the Canadian and Malaysian boys are shown in Table 27.

The correlations between the VPI and WVI scales for both groups were generally low, implying that the two tests are

Table 25

Computed Distances Between the Adjacent, Alternate, and Opposite Pairs of the VPI Scales in the Canadian and Malaysian Boys' Hexagons

Pair	Scales	Canadian Boys	Malaysian Boys
Adjacent Pairs	RI	.75	.333
	IA	.22	.335
	AS	.14	.24
	SE	.13	.07
	EC	.06	.01
	CR	.58	.11
Alternate Pairs	RA	.68	.09
	AE	.24	.19
	ER	.64	.09
	IS	.38	.31
	SC	.15	.06
	CI	.46	.336
Opposite Pairs	CA	.23	.20
	RS	.71	.15
	IE	.48	.334

Note. R = Realistic; I = Investigative; A = Artistic; S = Social; E = Enterprising; C = Conventional.

Table 26

Consistency of the Comparisons of the Adjacent, Alternate, and Opposite Pairs of the Hexagonal Model for Canadian and Malaysian Boys

	Canadian						Malaysian					
	RI	IA	AS	SE	EC	CR	RI	IA	AS	SE	EC	CR
RA	0̲	1	1	1̲	1̲	1	0̲	0	0	1̲	1̲	0
AE	0̲	1	1	1̲	1̲	0	0̲	0	0	1̲	1̲	1
ER	0̲	1	1	1̲	1̲	1	0̲	0	0	1̲	1̲	0
IS	0̲	1	1̲	1̲	1̲	0	0̲	0	1̲	1̲	1̲	1
SC	0̲	0̲	1	1	1̲	0̲	0̲	0̲	0	0	1̲	0̲
CI	0	1̲	1̲	1̲	1̲	0	1	1̲	1̲	1̲	1̲	1

	RA	AE	ER	IS	SC	CI	RA	AE	ER	IS	SC	CI
CA	0	0	0	0̲	1̲	0̲	1	1	1	0̲	1̲	0̲
RS	1̲	1	1̲	1	1̲	1	1̲	0	1̲	0	1̲	0
IE	0	1̲	0	1̲	1̲	1	1	1̲	1	1̲	1̲	0

Note. R = Realistic; I = Investigative; A = Artistic; S = Social; E = Enterprising; C = Conventional.

1 indicates that the order of row and column distances is in the hypothesized direction

0 indicates that distances are not in the hypothesized direction

_ = similarity in hexagonal pattern between the Canadian and Malaysian boys

Table 27

VPI and WVI Scales Pearson Product-Moment Correlations

for the Canadian and Malaysian Boys

		R	I	S	C	E	A	SC	M	ST	IN	AC
CR	C	.06	.24	-.02	.04	.07	.05	-.09	.08	.08	-.15	.09
	M	.03	.05	.05	.01	-.00	.07	-.00	-.01	-.04	-.03	-.00
MA	C	.04	-.05	.03	.09	.11	-.08	-.10	.11	-.03	-.04	.05
	M	.07	.07	.04	.06	.03	.05	-.02	.02	.04	.01	.05
AC	C	.12	.13	.08	.10	.14	.06	-.07	.07	.02	-.05	.12
	M	-.01	.01	.01	.02	-.04	-.02	.04	-.07	-.10	-.01	-.02
SU	C	.06	.02	.04	.10	.11	.02	-.08	.09	-.01	.00	.08
	M	.06	-.05	.08	.10	.04	.02	-.01	-.02	-.01	.07	.04
SR	C	.07	.04	.08	.07	.11	.01	-.07	.14	-.02	-.04	.09
	M	.03	-.03	.14	.10	.06	.06	-.02	-.08	.05	.02	.06
WL	C	.07	.10	.03	.04	.06	.03	-.07	.09	-.02	-.09	.07
	M	.02	.03	.05	.04	.04	.03	.01	-.07	.02	-.03	.03
SE	C	.05	-.03	.07	.07	.11	-.08	-.08	.10	-.04	-.03	.06
	M	.04	.03	.10	.09	.10	.08	-.02	-.02	.07	.01	.06
AS	C	.07	.03	.03	.08	.08	-.01	-.13	.07	-.03	-.06	.09
	M	.06	-.06	.06	.07	.01	.06	.01	-.07	-.08	.12	.01
ES	C	.01	-.01	.04	-.02	.04	.21	-.09	-.13	-.01	-.08	.03
	M	.06	-.01	.04	.05	-.00	.05	.02	-.02	-.03	.06	.04

Table 27 (Continued)

PR	C	.10	-.01	-.04	.06	.07	-.05	-.11	.14	-.08	-.01	.03
	M	.05	.07	.06	.06	.05	.07	.01	-.00	.10	-.03	.05
IN	C	.02	.05	-.05	.04	.10	.04	-.05	.09	.05	-.06	.08
	M	.01	.11	.05	.04	.05	.04	-.02	-.03	.06	-.06	.06
VA	C	.10	.09	-.07	.10	.07	.01	-.13	.07	-.11	-.05	.13
	M	.03	-.03	-.02	.01	-.01	.02	-.05	-.12	-.08	-.05	-.05
ER	C	.01	-.05	-.05	.08	.10	-.04	-.07	.16	.00	-.00	.01
	M	.05	.01	.10	.11	.07	.06	.00	-.02	.07	.02	.06
AL	C	.03	.11	.22	.10	.07	.08	-.09	-.08	.08	-.03	.21
	M	.06	.09	.11	.08	.05	.09	.04	-.02	.03	.00	.08
IS	C	.05	.34	.03	.14	.06	.04	-.06	.07	.12	-.14	.16
	M	.04	-.01	.07	.08	.02	.04	-.01	-.07	-.03	.02	.04

Note. R = Realistic; I = Investigative; S = Social; C = Conventional; E = Enterprising; A = Artistic; SC = Self-Control; M = Masculinity; ST = Status; IN = Infrequency; AC = Acquiescence; CR = Creativity; MA = Management; AC = Achievement; SU = Surrounding; SR = Supervisory Relations; WL = Way of Life; SE = Security; AS = Associates; ES = Esthetic; PR = Prestige; IN = Independence; VA = Variety; ER = Economic Return; AL = Altruism; IS = Intellectual Stimulation.

independent of each other. They may also suggest that the hypothesis by Ginzberg et al (1951) that interests develop earlier than values may be true in this case.

CHAPTER IV

Discussion

VPI Factor Structure for the Canadian and Malaysian Boys

One of the major objectives of this study was to obtain answers to three major questions that were asked with regard to the VPI, namely, will the VPI factor structure for the Malaysian boys correspond to that of the Canadian boys? Will the factor structure of both the Canadian and Malaysian boys in the rural area display a close resemblance to that of the corresponding group in the urban area? Thirdly, it was asked if the VPI factor structure for one SES level would be similar or different from that of another SES level for each group--Canadian and Malaysian boys.

The review of the literature has shown the viability of the VPI as an interest-cum-personality inventory. The VPI does possess some of the attributes which would render itself viable across cultural boundaries (Yom et al., 1975). Yet, very minimal attempts to examine the viability of the VPI across cultures have been done in the past.

The VPI had been chosen very carefully from among the other interest tests to reduce the possibility of contamination by cultural differences. It was expected that this study would produce results that would show that the VPI factor structure for both the Canadian and Malaysian groups would be closely similar.

The results of the analyses have shown that generally the VPI factor structure for both groups is very similar in kind and degree. One may infer that the VPI assesses the same underlying variables in both groups. In other words, this study does provide tentative evidence that the VPI could be used to assess the vocational interests or personality type of the Malaysian boys in Penang, Malaysia. While overall similarity in the VPI structure for both groups was observed in the comparison in the previous chapter, some discrepancies were also noted. The Canadian boys had the masculinity factor throughout the analyses, while the SES level three Malaysian boys had the artistic factor.

The additional factor for the Canadian group--the masculinity factor--may be explained in terms of the advancement in industrial technology in Canada. It does seem reasonable and realistic for this factor to emerge consistently within all the Canadian boys' VPI structure. The factor is highly loaded on the masculinity and realistic scales. The masculinity scale is associated with a preference for masculine kinds of jobs, while the realistic scale refers to interests for working with machines and tools. On the contrary, if the same factor were to emerge within the Malaysian boys' VPI factor structure, it would appear unrealistic, and perhaps illogical. Malaysia is primarily an agricultural country. The state of industrial-technological development may be considered as being at slightly above the infancy stage.

Moreover, one would expect very low interest to be shown in the area of the masculinity among the Malaysian boys, as in Malaysia the masculinity factor has not received an economic value as it has in Canada. That is to say, in Malaysia people involved in the technological and mechanical jobs tend to be the lowly paid group of people; hence, reducing a desire to go into such occupations.

The results of the analyses also indicated that among the SES level three Malaysian boys in the rural area, the artistic factor was important. The emergence of the artistic factor within the SES level three rural Malaysian boys has been shown to be associated with the sentimental and artistic nature of the Malays who constitute this group of people (Pederson, 1969). Primarily, this group of people are rice farmers who farm their small patches of land in the traditional method, using water-buffalo. No machinery is used.

The artistic scale is associated with a preference for jobs or activities involving dramatic, literary, musical, and handicraft art. The Malays in the rural area have been known for their interests and competencies in dramatic, literary, and handicraft art (Pederson, 1969), and are generally occupied with these activities in their leisure time, primarily in the handicraft art. In the urban areas, the Malays are more occupied with other, more urgent daily routines, and literary and dramatic activities become secondary in importance to these people.

In Canada, technology is so advanced that people tend to depend very much on machines. Working with machines may minimize one's involvement in the artistic activity. Working without machines, on the other hand, allows one to be more flexible and creative in their daily routine. A situation like this may explain why the artistic factor does not emerge within any of the Canadian boys' VPI structure.

VPI Factor Structure for Rural and Urban Canadian and Malaysian Boys

The VPI factor structure for the rural Canadian boys corresponds very closely to that of the urban group. One may infer from this similarity, both in kind and degree, that the place of residence--rural or urban--is not an obstacle in the expression of one's vocational interests. This inference does seem to be consonant with the recent sociological findings (Baldock, 1971; Schwarzeller, 1968, 1973). These sociological studies have shown that the place of residence does not handicap the rural people in their educational-vocational pursuits. In other words, rurality is not positively related to limited scope of occupational choice.

The VPI factor structure for the rural Malaysian boys also closely resembles both in kind and degree that of the urban Malaysian boys. A similar inference as for the rural-urban Canadian boys may be drawn.

The development in mass media, communication, education, and the high mobility of the rural Canadian and Malaysian boys have made rural residence no longer a handicap to them in relation to educational-vocational pursuits. The availability of television and transistor radios in the rural areas has expanded the occupational knowledge of the rural people.

The concern for equal opportunity for education and equivalent quality of education for the urban and rural students has made rural residence no longer a drawback for the rural boys.

The rural development in Malaysia has provided ample opportunity and easy access to urban cities. Rural-urban communication system has improved the mobility of the rural people. Indirectly, it has widened the scope of their occupational and educational knowledge.

In addition, the school counselors in Canada may have played a significant role to reduce discrepancy in occupational information between the rural and urban Canadian boys.

In summary, it may be said that, due to the above mentioned phenomena, the place of residence may no longer be positively related to one's occupational preference, interest, or choice.

VPI Factor Structure and SES Levels for Canadian and Malaysian Boys

Rural Canadian. The VPI factor structure for the SES level two and that of the SES level three rural Canadian boys is very similar in kind and degree. One may infer that the VPI is assessing the same underlying variables for both groups.

A difference in their SES level does not seem to be reflected in the expression of their vocational interests. One possible reason why a difference in their VPI structure does not exist is that both these groups attended similar educational institutions with equal opportunity and quality of education. The social and physical environment may not differ very much for these groups.

Rural Malaysian. The VPI factor structure for the SES level two and the SES level three Malaysian boys shows some similarity and differences. The vocational interest and the status factors are almost identical. However, the scales making up the self confidence factor for both groups differ slightly in degree rather than kind.

The major difference in the VPI structure lies in the presence of the artistic factor among the SES level three Malaysia. As explained in an earlier section, the Malays particularly are noted for their abilities in handicraft, like basketry, batik printing, and silverwares. The SES level three would get involved in this kind of activity in order to increase their income.

Urban Canadian. The VPI factor structures for the SES level one, level two, and level three exhibited a greater discrepancy.

They share only two common factors in kind and degree-the vocational interest factor and the masculinity factor.

Between the SES level one and the SES level three, they share one common factor--self-expression and social relations. The SES level two has the status + self-expression and social relations factors.

To explain why these differences exist, presents a difficult problem. The absence of the status factor among the SES level three boys may be explained in terms of their high positive loading on the masculinity factor. The parents of the SES level three students are generally employed in low level occupations. The review of the literature has shown how parental occupation affects their sons' vocational choices. Their low education prevents them from upward occupational aspiration or mobility. Status is associated with high prestige ranking occupations.

Urban Malaysian. There is more similarity than difference between the VPI factor structure for the SES level one, level two, and level three urban Malaysian boys. They shared in kind three factors--the vocational interest, status, and self-confidence factors. There is a slight difference in the size of the factor loadings on the scales making up these factors.

The major difference lies in the presence of the masculinity factor among the SES level one group. This group is generally accepted as the well-to-do people. Their outlook, attitudes, and values tend to be inclined toward the technological and professional occupations. They may be concerned, as indicated for the Canadian SES level one, with technological competence.

In summary, it may be said that overall the VPI factor structure for the Malaysian boys corresponds very closely to that of the Canadian VPI factor structure, implying by this close congruence that the VPI may be used to assess the vocational interest and personality type of the Malaysians.

Secondly, it was found that the place of residence--rural or urban--is not affecting the vocational interests for both groups.

Thirdly, the difference in the VPI structure among the three SES levels for the Canadian group suggests that the SES level is still influencing one's occupational interest. A much less clear influence of the SES level on the occupational interests among the Malaysian boys suggests that in Malaysia one's SES level is not affecting one's vocational interest as much as it does in Canada.

Further Research

While this study answers some of the major questions raised, it also suggests new researches worthy of investigation.

Now that the VPI does appear to have evidence that it could be used with the Malaysian students, one could begin to explore the vocational patterns of the three major ethnic groups of West Malaysia--the Malays, the Chinese, and the Indians. The findings of studies of this kind could assist the careers counselor in school to provide more efficient counseling to the high school students.

Secondly, a rational-empirical study may also be carried out to test the type-environment congruence of Holland's theory in the Malaysian context. In essence, this study will hypothesize that people in a particular environment would exhibit interest or personality traits which are compatible with that particular environment. That is to say, people in the teaching profession are categorized as social type. It would be expected that this group of people would have a high mean score on the social scale, and people in business would be expected to have a high mean on the enterprising scale, and so on.

A third study, using the present sample, may be pursued longitudinally to examine the relationship between inventoried interest and occupational choice.

A further study may examine the pattern of vocational interests of the urban versus rural group. Each ethnic group could be examined separately.

WVI Factor Structure for the Canadian and Malaysian Boys

The second major objective of this study was to examine the congruence of: (a) the WVI factor structure of the Canadian boys in kind and degree to that of the Malaysian boys; (b) the WVI factor structure of the urban Canadian and Malaysian boys to that of their respective counterparts in the rural area; and (c) the WVI factor structure for each of the SES level Canadian and Malaysian group, within urban and rural settings, to that of their respective counterparts.

It was anticipated that the answers to the above questions would be in the affirmative.

The scores on the 15 WVI scales were analyzed by the principal components analysis (PCA) for every different group. The data from the SES level one rural Canadian boys and the SES level three rural Canadian boys were not used due to small sample size (N = 10, N = 21 respectively). Similarly, the data from the SES level one rural Malaysian boys could not be used (N = 15).

The results of the PCA of the WVI for each group--Canadian and Malaysian--showed that only two pairs of the WVI factor structures closely resemble each other. One is between the Canadian and Malaysian boys as a total group, and the other between the SES level two urban Canadian and Malaysian boys. The two pairs showed a close similarity in kind and degree (Appendix K, Tables K1 and K7).

Between the Canadian and the Malaysian boys, the agreement in the WVI factor structure of the first three factors is high, implying that the variables for each of these factors--material, self-expression and social relations, and power and prestige--relate to each other in a similar manner within the nomological network.

Cronbach and Meehl (1955) suggest that a similarity of this kind may reflect that the test is valid for the Malaysian boys. The degree of the validity is reduced somewhat by the presence of the esthetic expression factor occurring within the Malaysian WVI factor structure. This factor, while not constituting a major factor, suggests the presence of a set of relationships within the network of the Malaysian group not found in the Canadian WVI structure.

The presence of the esthetic expression factor may be related to the earlier discussion on the VPI structure, in which it was mentioned that a subgroup within the Malaysian sample shows a high interest in artistic work, such as handicraft, dramatic, and literary art. In this respect, the presence of this factor within the Malaysian WVI structure confirms the earlier findings.

The similarity in the WVI factor structure between the SES level two urban Canadian boys and the corresponding Malaysian group is even greater than the above (Appendix K, Table K7). The WVI structure for both groups is close to being identical. This study assumes that, if a similarity in the WVI factor structure in kind and degree exists in both groups, then that is considered as evidence to suggest that the WVI could be used to assess the work values of this particular group of Malaysian boys in Penang, Malaysia.

While the above results are suggestive of the validity of the

WVI for use with the Malaysian boys, the amount of discrepancy in the WVI structure for the other five comparisons raises some questions, such as: Why is dissimilarity among the other five comparisons so great? Why is the WVI factor structure for the SES level two and three rural Canadian boys so dissimilar, while the WVI factor structure for the SES level two and three rural Malaysian boys shows some consistency? Does sample size in each group affect the structure of the relationships?

Aleamoni (1973) has shown how sample size could affect the factor structure of any analysis. The WVI structure between the rural Canadian boys ($\underline{N} = 158$) and the SES level two rural Canadian boys ($\underline{N} = 127$) is quite similar, because the size of the two samples is about the same.

For the Malaysian boys, a similar observation is true. The SES level two rural group ($\underline{N} = 96$) compares very well with the rural group ($\underline{N} = 172$) in terms of kind and degree of similarity in factor structure.

The equivalent sample size may partly explain why the WVI structure for the SES level two urban Canadian boys and that of the Malaysian counterpart compares very well (Canadian, $\underline{N} = 182$; and Malaysian, $\underline{N} = 235$). Their similarity might have affected the WVI structure for the total group comparison.

One other plausible explanation as to why the WVI factor structure for the SES level two urban groups is similar is that the Malaysian group constitutes the middle class population. In Malaysia, this group has assimilated through education and mass media much of the western "values" and life style.

With the available evidence, it may be concluded that it does appear that the WVI may be used to assess the work values of the SES level two urban Malaysian boys in Penang, Malaysia.

WVI Factor Structure for Rural and Urban Canadian and Malaysian Boys

The discussion that follows will focus on similarities and differences in the WVI structure for the five comparisons.

Between the rural Canadian and rural Malaysian boys, only two factor looks alike in kind and degree--material and power and prestige factors. The former is more similar than the latter. The Canadian boys have two additional factors--self-expression and social relations and independence--which the Malaysians do not have. The Malaysian boys have the social relations factor instead.

The independence factor among the Canadian group implies valuing self-sufficiency. This factor seems important for the rural Canadians. They live far apart from one another. They need to value self-sufficiency. On the other hand, the rural Malaysians live in close-knit villages with extended family system. To them, social relations is very important.

On the basis of the above evidence, it may be tentatively concluded that the WVI does not assess the same underlying variables for the two groups. Hence, the validity of the WVI for use with the rural Malaysian boys depends on more evidence, as elaborated under Further Research at the end of this section.

Between the SES level two rural Canadian boys and the corresponding Malaysian group, the WVI factors that emerged are the same except for the independence factor (Canadian) and the social relations and the creativity factors (Malaysian).

The presence of the independence and social relations factors may be explained in the same way as in the preceding discussion.

On the basis of the minimum similarity in their WVI structures, it cannot be concluded that the WVI is exhibiting a similar relationship pattern of the underlying variables for both groups, and, hence, the WVI is not assessing the same constructs for both groups.

Comparing the WVI structure for the urban Canadian boys with that of the urban Malaysian boys, one sees obvious gross dissimilarity. The WVI structure for the urban Canadian boys has two factors, namely, the general work value factor and the self-expression and social relations factor, while that for the urban Malaysian boys, four, which are the material, self-expression and social relations, power and prestige and esthetic expression factors.

The presence of the power and prestige factor among the urban

Malaysian boys suggests the valuing of high administrative positions. It is reasonable to expect this factor to emerge within the Malaysian WVI structure. Malaysia was once a British colony and all the major administrative positions were held by the British. Since Malaysia achieved its independence in 1957, local people are gradually taking over the administrative role. This role is highly esteemed by the general population.

The WVI factor structure for the SES level one urban Canadian boys and that of the Malaysian counterpart exhibits wide differences that it may be concluded that the WVI was not able to assess the work values of the SES level one urban Malaysian boys.

A similar observation and conclusion applies to the SES level three urban Canadian-Malaysian comparison.

In light of the contradictory results, it may be concluded that:

1. There is enough evidence to suggest that the WVI can be used to assess the work values of the SES level two urban Malaysian boys in Penang, Malaysia.

2. There is need for more research before any conclusion may be drawn with regard to the other group comparisons.

The comparison between the WVI factor structure of the rural Canadian boys and that of the urban Canadian boys displays gross dissimilarity. The rural Canadian boys have four factors--material, self-expression and social relations, power and prestige, and independence, while the urban Canadian boys have only two--the general work value factor and the self-expression and social relations factor.

The difference in the WVI structure for these groups suggests that place of residence partly accounts for the difference in the work value systems of these two groups of Canadian boys.

The urban Canadian boys have a less differentiated value system. Perhaps as indicated in the earlier chapter, the urban boys are more concerned with the immediate physiological needs (Maslow, 1954).

Between the WVI factor structure of the rural Malaysian boys and that of their urban counterpart, differences were also observed. The rural group has three factors within their WVI structure, and the urban group has four. They share in common the material and power and prestige factors.

The rural group is concerned with social relations while the urban group is more engrossed in self-expression and social relation and esthetic expression. As indicated earlier, the rural Malaysian people live in closely-knit villages with the extended family system. To them, social relations is very valuable. For the urban Malaysian boys, the presence of the esthetic expression and self-expression and social relations factors may reflect an expression of a psychological need. Their basic physiological need is generally easily fulfilled.

It may be concluded that with the available evidence, place of residence for the Malaysian boys does play an important role in the development of the work value system of the rural and urban boys.

WVI Factor Structure and SES Levels for Canadian and Malaysian Boys

Rural Canadian. Comparison between the SES level two rural Canadian boys and the SES level three rural Canadian boys cannot be made due to small sample size of the SES level three group (N = 21).

Rural Malaysian. For the Malaysian boys, however, the WVI structure across the SES level two and three for the rural Malaysian boys, with the exception of the social relations factor, reveals gross dissimilarity. It does seem reasonable to assume that within the rural setting, the SES level of the individual does have an influence on the work value system of the Malaysian boys.

Urban Canadian. Between the SES level one, two, and three urban Canadian boys, the WVI structure is different, both in terms of number of factors and the composition of the common factors.

This difference alone would be sufficient to conclude that the SES level affects the urban boys' work value system.

As can be seen (Appendix K, Tables K6, K7, and K8), the SES level one urban Canadian boys have five factors; level two, three factors, and level three, two factors.

It is reasonable for the SES level one urban Canadian boys to have a more differentiated factor structure, as their value system may be more divergent. On the other hand, people in the low SES group might be more concerned about the more basic needs of life, such as physiological needs (Maslow, 1954).

Urban Malaysian. For the urban Malaysian boys, however, the WVI structure across the SES levels looks very much alike. The similarity suggests that the difference between one SES level and the other levels may not be very great. The three groups are more homogenous with regards to work value systems.

The presence of the esthetic expression factor among the level three group indicates a means to an end. That is to say, the esthetic expression factors has an extrinsic value to these people. This value permits them to add beauty to the world and at the same time act as economic rewards.

It may be concluded that with the available data, there is an indication that the SES level is associated with the expression of work values for both the urban Canadian and Malaysian boys. For the urban Canadian boys, the relationships appear more clearly than they are for the urban Malaysian boys.

Further Research

This study has provided partial answers to the questions of the validity of the WVI for use with the Malaysians. Sufficient evidence is available to show that the WVI could be used to assess the work values of the SES level two urban Malaysian boys in Penang.

The potential for its adoption and use in Malaysia may depend upon further research findings in this area. Studies may be conducted to examine: (a) whether or not an increase in the sample size for each of the groups, where the results were not discriminating enough, would allow clear-cut conclusions to be drawn; (b) the way each statement in the WVI is interpreted, so that one may determine the comparability of the stimuli; and (c) the way the 15 values are ranked by each group to throw some light as to how the work value systems look like in both cultures.

Supplementary Findings

Hexagonal model. The hexagonal model (Holland et al., 1969) proposes that among the six personality types--realistic, investigative, social, conventional, enterprising, and artistic--there are consistent psychological relationships.

The adjacent pairs (RI, IA, AS, SE, EC, CR) are more closely related to one another than the alternate pairs (RA, AE, ER, IS, SC, CI), and the alternate pairs are more closely related than the opposite pairs (CA, RS, IE). Fifty-four possible comparisons could be made among these pairs.

The results of the analyses show that for the Canadian boys, 36 comparisons were consistent with the proposed model, and for the

Malaysians, 30 comparisons were consistent with the proposed model.

It may be concluded on the basis of the probability of .5 that these results support the viability of Holland et al.'s hexagonal model.

The comparisons also show that between the Canadian and Malaysian boys, 30 comparisons were similar (Table 26). This constitutes about a 56% similarity in the pattern of consistency. It may be inferred that there is evidence that, for both groups, the psychological relationships among the six personality types are quite similar. That is to say, the way each of the personality types relates to one another in Canada is closely similar to the way the six personality types in Malaysia relate to one another. This similarity may suggest that each of the six personality types in both cultures behave in similar ways with regard to the vocational preferences. More evidence is required, however, to draw a stronger conclusion regarding the similarity in the psychological relationships among the six types for both groups.

VPI and WVI scales correlations. The correlations between the VPI and WVI scales for both groups are generally low. The range for the Canadian boys is from .00 to .34, and for the Malaysian boys, from .00 to .14.

The low correlations between the two tests suggest that the two tests are not measuring the same variable. The VPI is a test which measures vocational interests, while the WVI assesses the work values. An interest is generally defined as a preference for a particular activity, while a value has been defined as "an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (Rokeach, 1973, p. 5).

The overall comparisons of the coefficients between the Canadian boys and the Malaysian boys show that the differences between the two groups are too small to be considered important. Except for the altruism and investigative scales (.34 against -.01), no difference may be considered large enough to make the matrices for both groups different.

The overall similarity in the pattern of the correlations for the two groups suggests that the two tests relate in the same manner for the Malaysian boys as they do for the Canadian boys. The similarity in the pattern of the relationships of the two tests suggests that the two tests are valid for use with the Malaysian boys. The low correlations may also suggest that the work value system of the subjects in this study has not fully developed.

Further Research

The low VPI-WVI scale correlations suggest that further investigations need to be done. Among the studies that could be carried out would be:

(a) to establish the work values of each of the six personality types. Using the norm, one could examine the work values of each of the six personality types in his own study.

(b) to carry out another VPI-WVI scale correlations with the same subjects at a later stage of their development to examine if indeed their work values have not crystallized at this point in time. If higher correlations were found at a later date, one could set out to make prediction about the relationships between the vocational interests and work values. The outcome of such a study would provide some data on the predictive validity of the two tests.

Summary and Conclusion

The questions asked in this study were partially answered. More studies are needed before any clear-cut conclusions may be drawn.

Tentatively, this study has indicated that the VPI factor structure between the Canadian and Malaysian boys shows a close similarity. A close similarity may imply a similar pattern of relationships of the constructs within the nomological network, which suggests a certain degree of the validity of the VPI for use with the Malaysian boys in Penang, Malaysia.

As for the WVI, however, discrepancy overrides similarity. Of the seven comparisons made, only two show a high degree of factor congruence. The evidence is not sufficient to draw any strong conclusion, except that with the SES level two urban Malaysian boys, the WVI does show strong evidence that the relationship among the underlying variables for the Malaysian group is quite similar to that of the SES level two urban Canadian boys. It may be inferred that the WVI may be used to assess the work values of this particular group in Penang, Malaysia.

The relationship between place of residence and one's vocational interests shows that place of residence for both groups is not playing a vital role in one's vocational preferences. The rural and urban boys in both groups display similar VPI factor structure.

On the contrary, the difference in the WVI factor structure between rural Canadian and Malaysian boys, and that of the urban counterparts, suggest that, as far as work values are concerned, place of residence does have some impact on the work value system of both groups.

Across the SES levels, it was shown that, for the Canadian boys, the SES levels are related to one's vocational preference. But for the Malaysian boys, the SES levels do not seem to show similar relationships.

With regard to the work values, it may be inferred that there is a positive relationship between the work values and one's SES levels for both the Canadian and Malaysian boys.

The comparisons of the hexagonal model for the Canadian and Malaysian boys show that Holland's hexagonal model is a viable model to demonstrate the psychological relationships among the six personality types. These comparisons also show that the psychological relationships among the six personality types in the Malaysian sample correspond closely to those of the Canadian sample.

The correlations between the VPI and the WVI for both groups are generally low, which indicates that the two tests are measuring different variables. They also show that there is a very close similarity in the correlation coefficients of the Malaysian boys to those of the Canadian boys. This similarity in the pattern suggests that the VPI and the WVI relate in the same manner for both groups, which suggests that the VPI and the WVI are valid for use with the Form IV Malaysian boys in Penang, Malaysia.

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Appendix A

Questionnaire for the Canadian Students

Side 1

Questionnaire

Date: ....

The information that you give in this questionnaire will be used strictly for research purposes and will be kept in strict confidence by the researcher.

It would be greatly appreciated if you could provide answers to ALL the questions presented. However, if you feel you MUST omit answering some questions, feel free to do so.

1. What is your name (in block letters)? ....
First Middle Last

2. What is the name of your school? ....

3. Indicate with a cross (X) the academic program you are in now:

Matriculation program .....

Non-matriculation program ..... Specify ....

4. What is the occupation of the head of the household? (Name the occupation if you can. For example, clerk, teacher, farmer, etc.)
....

5. Describe briefly what he or she does in his or her work. ....
....
....
....

6. Place a cross (X) in the appropriate space to indicate the range of annual income of the head of the household, if you feel this is not an invasion of privacy.

$25,000 and above .....
$20,000 to $24,999 .....
$15,000 to $19,999 .....
$12,000 to $14,999 .....
$10,000 to $11,999 .....
$ 9,000 to $ 9,999 .....
$ 8,000 to $ 8,999 .....
$ 7,000 to $ 7,999 .....
$6,000 to $6,999 .....
$5,000 to $5,999 .....
$4,000 to $4,999 .....
$3,000 to $3,999 .....
$2,000 to $2,999 .....
$1,000 to $1,999 .....
$ 900 or less .....

7. Taking into consideration your interests, academic background, values, and family background, list in order of preference three occupational titles for the work you would like to perform after leaving school, college, or university.

First preference ....
Second Preference ....
Third preference ....

PLEASE CONTINUE ON SIDE 2

Side 2

QUESTIONNAIRE (CONT.)

8. The following 15 statements tell you that different kinds of work provide different kinds of satisfaction to the worker. These satisfactions are not all considered equally important. Some are very important to some people but of little importance to other people. Read each of these statements carefully, then rank each statement in order of importance for you by placing a 1 next to the most important statement for you, a 2 next to the next important statement for you, and so on. The least important statement for you relative to the other statements should be numbered 15. Please make sure that each statement is given a number to indicate your ranking of it.

   (a) work that enables one to contribute to the welfare of others .....

   (b) work which permits one to make beautiful things and to contribute beauty to the world .....

   (c) work which permits one to invent new things, design new products, or develop new ideas .....

   (d) work which provides opportunity for independent thinking and for learning how and why things work .....

   (e) work which gives one a feeling of accomplishment in doing a job well .....

   (f) work which permits one to work in his own way, as fast or as slowly as he wishes .....

   (g) work which gives one standing in the eyes of others and commands respect .....

   (h) work which permits one to plan and lay out work for others to do .....

   (i) work which pays well and enables one to have the things he wants .....

   (j) work which provides one with the certainty of having a job even in hard times .....

   (k) work which is carried out under pleasant conditions--not too hot or too cold, noisy, dirty, etc. .....

   (l) work which is carried out under a supervisor who is fair and with whom one can get along .....

   (m) work which brings one into contact with fellow workers whom he likes .....

   (n) work that permits one to live the kind of life he chooses and to be the type of person he wishes to be .....

   (o) work that provides an opportunity to do different types of jobs .....

9. Give a brief and clear description of the kind of work that you see yourself doing five years from now. ....

   ....

   ....

   ....

END OF THE QUESTIONNAIRE - THANK YOU VERY MUCH FOR YOUR COOPERATION

Appendix B

Questionnaire for the Malaysian Students

QUESTIONNAIRE/SOALSELIDIK

1. What is your full name?
   Apakah nama sepenuh anda? ....

2. What is your home address?
   Apakah alamat rumah anda? ....
   ....

3. Do you have a telephone at home? Yes/Ya ☐ No: ....
   Adakah anda mempunyai talipon di rumah? No/Tidak ☐

4. What is the name of your school?
   Apakah nama sekolah anda? ....

5. What stream are you in? Arts/Sastera ☐
   Apakah jurusan anda? Science/Sains ☐

6. What is your father's occupation? (Name the occupation if you can. For example: clerk, district officer, bus driver, etc.)
   Apakah pekerjaan bapa anda? (Beri nama pekerjaannya jika boleh. Misalnya: kerani, pegawai, daerah, derebar bas, dan lain-lain.)
   ....

7. Describe briefly what he does in his work.
   Huraikan dengan rengkas apa yang dibuatnya di dalam pekerjannya.
   ....
   ....
   ....

8. Where does he work?
   Dimanakah ia bekerja? ....

9. Indicate with a tick (✓) the highest level of education your father has.
   Tandakan dengan (✓) peringkat tertinggi pendidikan bapa anda.

   Never attended school/Tak pernah bersekolah .... ☐
   Some primary education/Beberapa tahun di sekolah rendah .... ☐
   Completed primary school/Tamat sekolah rendah .... ☐

Form I or II/Tingkatan I atau II .... ☐

Form III/Tingkatan III .... ☐

SRP or LCE passed/Lulus SRP atau LCE .... ☐

Form IV/Tingkatan IV .... ☐

Form V/Tingkatan V .... ☐

MCE or SC or SPM passed/Lulus MCE atau SC atau SPM .... ☐

Form VI Lower, Form VI Upper, HSC passed, tertiary, and University/Tingkatan VI Bawah, Tingkatan VI Atas, Lulus STP (HSC), maktab-maktab dan Universiti .... ☐

Do not know/Tak tahu .... ☐

10. What is your mother's occupation? (Name the occupation if you can. For example: teacher, typist, nurse, etc.)
Apakah pekerjaan ibu anda? (Beri nama pekerjannya jika boleh. Misalnya: guru, jurutaip, jururawat, dan lain-lain.)

....

11. Describe briefly what she does in her work.
Huraikan dengan rengkas apa yang dibuatnya di dalam pekerjannya.

....

....

....

12. Where does she work?/Dimanakah ia bekerja? ....

....

13. Indicate with a tick (✓) the highest level of education your mother has.
Tandakan dengan (✓) peringkat tertinggi pendidikan ibu anda.

Never attended school/Tak pernah bersekolah .... ☐

Some primary education/Beberapa tahun di sekolah rendah .... ☐

Completed primary school/Tamat sekolah rendah .... ☐

Form I or II/Tingkatan I atau II .... ☐

Form III/Tingkatan III .... ☐

SRP or LCE passed/Lulus SRP atau LCE .... ☐

Form IV/Tingkatan IV .... ☐

Form V/Tingkatan V .... ☐

MCE or SC or SPM passed/Lulus MCE atau SC atau SPM .... ☐

Form VI Lower, Form VI Upper, HSC passed, tertiary, and
University/Tingkatan VI Bawah, Tingkatan VI Atas, lulus HSC
(STP), maktab-maktab dan Universiti .... ☐

Do not know/Tak tahu .... ☐

14. How many brothers and sisters do you have?
Berapa orang adik beradik lelaki dan perempuan anda?

.... brothers/orang abang dan adik lelaki

.... sisters/orang kakak dan adik perempuan

15. How many brothers and sisters are living with you at home now?
Berapa orang adik beradik anda yang tinggal bersama anda masa ini?

.... brothers/orang abang dan adik lelaki

.... sisters/orang kakak dan adik perempuan

16. Is there any other person living with your family?
Adakah orang lain yang tinggal bersama-sama keluarga anda?
Yes/Ya ☐
No/Tidak ☐

17. How many?/Berapa orang?

.... person(s)/orang

18. Does your family support this/these other person(s)?
Adakah keluarga anda menanggung orang ini?
Yes/Ya ☐
No/Tidak ☐

19. Against each of the following items, indicate with a tick (✓) in the boxes provided, those items that you have at home.
Tandakan dengan (✓) di dalam petak-petak yang disediakan, perkara-perkara yang ada dirumah anda.

motorcycle/motorsikal .... ☐

bicycle/basikal .... ☐

refrigerator/peti sejuk .... ☐

electric fan/kipas letrik .... ☐

radio/radio .... ☐

sewing machine/mesin jahit .... ☐

television/talivisyen .... ☐

boat with engine/perahu ikan berinjin .... ☐

boat without engine/perahu ikan tanpa injin .... ☐

motorcar/motorkar .... ☐

telephone/talipon .... ☐

air-conditioner/alat hawa dingin .... ☐

20. Taking into consideration your interests, academic background, values, and family background, list in order of preference three occupational titles for the work you would like to perform after leaving school or college or university. To help you identify the occupations, a list of titles for the more common occupations is attached. Should the title(s) of the occupations you choose not appear on this list, write your own title(s).
Dengan memberi pertimbangan kepada minat, latarbelakang akademik, nilai-nilai, dan latarbelakang keluarga anda, tulis tiga jenis pekerjaan menurut kegemaran anda, yang anda ingin lakukan setelah tamat persekolahan anda di sekolah, di maktab atau di universiti. Untuk membantu anda memilih pekerjaan-pekerjaan itu, satu senarai pekerjaan-pekerjaan yang umum disertakan. Sekiranya pekerjaan atau pekerjaan-pekerjaan yang anda pilih itu tidak terdapat di dalam senarai ini, anda berilah nama pekerjaan yang anda pilih itu.

First preference/Pilihan pertama: ....

Second preference/Pilihan kedua: ....

Third preference/Pilihan ketiga: ....

List of Occupational Titles for Question 20/ Senarai Nama-nama Pekerjaan bagi Soalan 20

1. Rubber estate manager/Pengurus ladang getah
2. Tourist guide/Pemandu pelancung
3. Physical education teacher/Guru pendidikan jasmani
4. Personnel in the army, navy, or air force/ Pegawai tentera darat, laut, atau udara
5. Tin mining manager/Pengurus lombong bijih
6. Federal Land Development manager/Pengurus Lembaga Kemajuan Tanah Persekutuan
7. Lumberjack/Pekerja kayu balak
8. Fisheries officer/Pegawai perikanan
9. Forest reserve officer/Pegawai hutan simpanan
10. Radio/TV repairman/Pembaik radio/TV
11. Engineer/Jurutera
12. Industrial arts teacher/Guru seni perusahaan
13. Contractor/Kontrektor
14. National Electricity Board officer/ Pegawai Lembaga Letrik Negara
15. Engine repairer/Pembaik injin
16. Carpenter/Tukang kayu
17. Driver/Derebar
18. Aeroplane mechanic/Mekanik kapal terbang
19. Accountant/Akauntan
20. Bank clerk/Kerani bank
21. Mathematics teacher/Guru ilmu hisab
22. Statistician/Perangkawan
23. Chief clerk/Kerani besar
24. Surveyor/Juru-ukur
25. Shop-keeper/Pekedai
26. Accounts clerk/Kerani akaun
27. Cashier/Tukang wang
28. Lawyer/Peguam
29. Salesman/Jurujual
30. History teacher/Guru sejarah
31. Advertising agent/Agen pengiklan
32. Sales manager/Pengurus jualan
33. Politician/Ahli politik
34. Radio/TV announcer/Juruhebah radio/TV
35. Public relation officer/Pegawai perhubungan raya
36. Foreign and civil service officer/Pegawai perkhidmatan dalam dan luar negeri
37. Doctor/Doktor
38. Science teacher/Guru sains
39. Chemist/Ahli kimia
40. Hospital assistant/Pembantu rumah sakit
41. Dental surgeon/Doktor gigi
42. Scientist at Rubber Research Institute/ Ahli sains di Institut Penyelidikan Getah
43. Veterinarian/Doktor binatang
44. Pharmacist/Ahli farmasi
45. Laboratory technician/Juruteknik makmal
46. Architect/Akitek
47. Photographer/Tukang gambar
48. Art teacher/Guru lukisan
49. Giftwares salesman/Jurujual barang2 kesenian
50. Actor/Pelakun
51. Commercial artist/Pelukis perdagangan
52. Tailor/Tukang jahit
53. Industrial arts artist/Pelukis seni perusahaan
54. Goldsmith/Tukang emas
55. Novelist/Novelis
56. Journalist/Wartawan
57. Language teacher/Guru bahasa
58. Radio/TV script writer/Penulis skrip Radio/TV
59. Librarian/Pustakawan
60. Court interpreter/Jurabahasa mahkamah
61. Magazine/journal writer/Penulis rencana majalah/jurnal
62. Bookshop owner/Tuanpunya kedai buku
63. Translator/Penterjemah
64. Musician/Ahli musik
65. Orchestra leader/Pemimpin orkestra
66. Music teacher/Guru musik
67. Singer/Penyanyi
68. Radio/TV music announcer/Juruhebah bahagian musik radio/TV
69. Classical dance teacher/Guru tarian asli
70. Music store salesman/Jurujual alat-alat musik
71. Music store owner/Tuanpunya kedai alat-alat musik
72. Guitarist or player of other musical instrument/Pemain gitar atau alat-alat musik yang lain

73. Judge or magistrate/Hakim mahkamah tinggi atau rendah
74. District officer/Pegawai daerah
75. Civics teacher/Guru tatarakyat
76. Social worker/Pegawai kebajikan masyarakat
77. Male nurse/Jururawat lelaki
78. Youth employment officer/Pegawai pekerjaan belia
79. Aborigines adviser/Penasihat orang asli
80. Police officer/Pegawai polis
81. Public health officer/Pegawai kesihatan awam

21. The following 15 statements tell you the different kinds of benefits that different kinds of work can provide for the worker. Read them carefully. Then rank them in order of importance to you from 1 to 15. That is, place number 1 against the statement you consider most important to you; number 2, the second most important, etc. The statement that you consider least important to you should be numbered 15.
15 kenyataan berikut menyatakan kepada anda berbagai-bagai jenis faedah yang berbagai-bagai jenis pekerjaan dapat memberikan kepada pekerja. Bacalah kenyataan-kenyataan ini dengan teliti. Kemudian susunkan kenyataan-kenyataan ini dari 1 hingga 15 untuk menyatakan betapa pentingnya tiap-tiap satu kenyataan itu bagi anda. Iaitu, tulis nombor 1 bertentangan dengan kenyataan yang anda anggap paling penting bagi anda; nombor 2 bagai kenyataan yang kedua pentingnya, dan seterusnya. Kenyataan yang anda anggap paling tidak penting bagi anda hendaklah diberi nombor 15.

a. work which enables one to contribute to the welfare of .... ☐
others/pekerjaan yang membolehkan seseorang memberi sumbangan terhadap kebajikan orang lain

b. work which permits one to make beautiful things and to .... ☐
contribute beauty to the world/pekerjaan yang membolehkan seseorang membuat benda-benda yang indah dan memberi keindahan kepada alam

c. work which permits one to invent new things, design new ... ☐
products or develop new ideas/pekerjaan yang membolehkan seseorang mereka barang-barang baru, mencorak hasil2 baru atau menghasilkan ide-ide baru

d. work which provides opportunity for independent thinking... ☐
and for learning how and why things work/pekerjaan yang memberi peluang bagi cara berfikir yang bebas dan bagi mempelajari bagaimana dan mengapa sesuatu itu terjadi

e. work which gives one a feeling of accomplishment in doing ... ☐
a job well/pekerjaan yang memberikan seseorang itu perasaan yang ia telah berjaya melakuhan sesuatu pekerjaan itu dengan baik

f. work which permits one to work in his own way, as fast or . ☐
as slowly as he wishes/pekerjaan yang membolehkan seseorang itu bekerja menurut caranya sendiri, secepat atau selambat yang disukainya

g. work which gives standing in the eyes of others and commands respect/pekerjaan yang dipandang tinggi dan dihormati oleh orang lain ..... ☐

h. work which permits one to plan and lay out work for others to do/pekerjaan yang membolehkan seseorang itu merancang dan membentangkan kerja-kerja bagi orang lain melakukannya ..... ☐

i. work which pays well and enables one to have the things he wants/pekerjaan yang memberi bayaran yang tinggi dan yang membolehkan seseorang itu memiliki segala yang dikehendakinya .. ☐

j. work which provides one with the certainty of having a job even in hard times/pekerjaan yang memberi jaminan kepada seseorang itu yang ia tetap memegang jawatan walaupun pada masa-masa kemelesetan ... ☐

k. work which is carried out under pleasant conditions--not too hot or too cold, noisy, dirty, etc./kerja yang dilakukan di dalam keadaan-keadaan yang selesa--tidak terlalu panas atau terlalu sejuk, bising, kotor, dan lain-lain .... ☐

l. work which is carried out under a supervisor who is fair and with whom one can get along/kerja yang dilakukan dibawah seorang penyelia yang adil dan yang dengannya seseorang itu boleh bekerjasama ...... ☐

m. work which brings one into contact with fellow workers whom he likes/pekerjaan yang membolehkan seseorang itu bergaul dengan rakan-rakan sepekerjaan yang disukainya ... ☐

n. work that permits one to live the kind of life he chooses. and to be the type of person he wishes to be/pekerjaan yang membolehkan seseorang itu hidup menurut cara yang dipilihnya dan menjadi orang yang ia ingin jadi ☐

o. work that provides an opportunity to do different types of jobs/pekerjaan yang memberi peluang untuk membuat bermacam-macam jenis urusan atau kerja .. ☐

22. Give a brief description of the kind of work that you see yourself doing five years from now.
Beri suatu huraian rengkas mengenai jenis pekerjaan yang anda rasa anda akan lakukan lima tahun dari sekarang.
....

....

....

....

23. Indicate by ticking (✓) in one of the boxes below, the amount of time you are willing to spend from now in order to prepare yourself for the occupation you would like to enter.
Tandakan dengan (✓) di dalam salah satu petak di bawah, jumlah masa yang anda sedia memberikan untuk latihan dari sekarang untuk melengkapkan diri anda bagi pekerjaan yang anda ingin memegang.

1 to 2 years/1 hingga 2 tahun .... ☐

3 to 4 years/3 hingga 4 tahun .... ☐

5 to 6 years/5 hingga 6 tahun .... ☐

More than 7 years/Lebih dari 7 tahun .... ☐

24. Indicate by ticking (✓) in one of the boxes below, the institution that you would like to be admitted in order to prepare yourself for the occupation you would like to enter.
Tandakan dengan (✓) di dalam salah satu petak di bawah, institusi yang anda ingin memasuki untuk melengkapkan diri anda bagi pekerjaan yang anda ingin memegang.

Teachers' college/Maktab perguruan .... ☐

Technical institute/Institut teknik .... ☐

Technical college/Maktab teknik .... ☐

Agricultural college/Maktab pertanian .... ☐

Trade school/Sekolah pertukangan .... ☐

Apprentice training centre/Pusat latihan perantisan .... ☐

University/Universiti .... ☐

Others/Lain-lain (Specify/Nyatakan) .... ☐

....

Thank you for your cooperation.
Diucapkan berbanyak-banyak terima kasih di atas kerjasama anda.

Appendix C

Malaysian SES Scale

Malaysian SES Scale

1. SES Scale is made up of the sum of weight attached to occupation, educational level, and property index of the head of the household. The different SES levels are classified as follows:

   0 - 3 points = Low SES

   4 - 7 points = Medium SES

   8 or more points = High SES

2. Weights for occupation

Weights	Occupations
0	labourer, agricultural worker, tapper, maid, caretaker, herder, cleaner
3	farmer, fisherman, miner, docker, driver, cook, vendor, conductor, logger, railway fireman, postman, launderer
6	stenographer, clerk, salesman, journeyman, machine operator, supervisor-foreman
9	technician, primary or secondary school teacher, journalist, manager, government official, proprietor, religious worker, artist
12	scientist, engineer, doctor, lawyer, university lecturer, legislator
0	not in labour force: housewife, invalid, student, retired
0	not known

3. Weights for education of the head of the household

Weights	Highest Educational Attainment
0	Never attended school
1	Some primary education
2	Completed primary education
3	Form I or II
4	Form III
5	SRP or LCE (Sijil Pelajaran Malaysia/Lower Certificate of Education) passed
6	Form IV
7	Form V
8	MCE/SPM or SC (Malaysian Certificate of Education/Sijil Pelajaran Malaysia, School Certificate)
9	Form VI Lower
10	Form VI Upper
11	HSC/STP passed (Higher School Certificate/Sijil Tinggi Pelajaran)
12	Tertiary
13	University
0	Not known

4. Property index

Weight	Property Items
½ point for each	motorcycle, bicycle, refrigerator, electric fan, radio, sewing machine, television, boat with motor, boat without motor
1 point for each	car, telephone
1½ points for	air conditioning

Appendix D

Vocational Preference Inventory for the Canadian Students

Side 1

VOCATIONAL PREFERENCE INVENTORY
(modified)

Do not fill in these boxes

Name: ....

School: ....

This is an inventory of your feelings and attitudes about many kinds of work. Please indicate your feelings and attitudes in the manner described below.

You will find by each occupational title listed below three numbers: 0 1 2.

Cross out 0 like this (~~0~~) if you are undecided (U) about an occupation.
Cross out 1 like this (~~1~~) if you like (L) or find that it interests or appeals to you.
Cross out 2 like this (~~2~~) if you dislike (D) an occupation or find it uninteresting.

	U	L	D		Code
1. Airplane pilot	0	1	2	C.1	(7)
2. Private investigator	0	1	2		(8)
3. YMCA secretary	0	1	2		(9)
4. Detective	0	1	2		(10)
5. Post office clerk	0	1	2		(11)
6. Route salesman	0	1	2		(12)
7. Electronic technician	0	1	2		(13)
8. Humorist	0	1	2		(14)
9. Photographer	0	1	2		(15)
10. Interplanetary scientist	0	1	2		(16)
11. Airplane mechanic	0	1	2		(17)
12. Meteorologist	0	1	2		(18)
13. Foreign missionary	0	1	2		(19)
14. Bookkeeper	0	1	2		(20)
15. Speculator	0	1	2		(21)
16. Poet	0	1	2		(22)
17. Deep sea diver	0	1	2		(23)
18. Newspaper editor	0	1	2		(24)
19. Nursery school teacher	0	1	2		(25)
20. Lawyer	0	1	2		(26)
21. Fish and game specialist	0	1	2		(27)
22. Biologist	0	1	2		(28)
23. High school teacher	0	1	2		(29)
24. Quality control expert	0	1	2		(30)
25. Buyer	0	1	2		(31)
26. Symphony conductor	0	1	2		(32)
27. Wrecker and salvage man	0	1	2		(33)
28. Narcotics inspector	0	1	2		(34)
29. Elementary school teacher	0	1	2		(35)
30. School principal	0	1	2		(36)
31. Power station operator	0	1	2		(37)
32. Astronomer	0	1	2		(38)
33. Juvenile delinquency expert	0	1	2		(39)
34. Budget clerk	0	1	2		(40)
35. Stock & bond salesman	0	1	2		(41)

	U	L	D	Code
36. Musician	0	1	2	(42)
37. Prize fighter	0	1	2	(43)
38. Diplomat	0	1	2	(44)
39. Experimental laboratory engineer	0	1	2	(45)
40. Crane operator	0	1	2	(46)
41. Master plumber	0	1	2	(47)
42. Aeronautical design engineer	0	1	2	(48)
43. Speech therapist	0	1	2	(49)
44. Traffic manager	0	1	2	(50)
45. Manufacturer's representative	0	1	2	(51)
46. Author	0	1	2	(52)
47. Fireman	0	1	2	(53)
48. Army general	0	1	2	(54)
49. Interior decorator	0	1	2	(55)
50. Novelist	0	1	2	(56)
51. Power shovel operator	0	1	2	(57)
52. Anthropologist	0	1	2	(58)
53. Marriage counsellor	0	1	2	(59)
54. Statistician	0	1	2	(60)
55. Television producer	0	1	2	(61)
56. Commercial artist	0	1	2	(62)
57. Wild animal trainer	0	1	2	(63)
58. U.N. official	0	1	2	(64)
59. Sculptor	0	1	2	(65)
60. Automobile mechanic	0	1	2	(66)
61. Surveyor	0	1	2	(67)
62. Zoologist	0	1	2	(68)
63. Physical education teacher	0	1	2	(69)
64. Court stenographer	0	1	2	(70)
65. Hotel manager	0	1	2	(71)
66. Free lance writer	0	1	2	(72)
67. Stunt man (motion picture)	0	1	2	(73)
68. Criminal lawyer	0	1	2	(74)
69. Professional athlete	0	1	2	(75)
70. Carpenter	0	1	2	(76)

PLEASE TURN TO SIDE 2

Side 2

VOCATIONAL PREFERENCE INVENTORY (CONT.)

	U	L	D		Code
71. Construction inspector	0	1	2		(77)
72. Chemist	0	1	2		(78)
73. Playground director	0	1	2		(79)
74. Bank teller	0	1	2		(80)
75. Business executive	0	1	2	C.2	(7)
76. Musical arranger	0	1	2		(8)
77. Jockey	0	1	2		(9)
78. Ventriloquist	0	1	2		(10)
79. Army officer	0	1	2		(11)
80. Banker	0	1	2		(12)
81. Radio operator	0	1	2		(13)
82. Independent research scientist	0	1	2		(14)
83. Clinical psychologist	0	1	2		(15)
84. Tax expert	0	1	2		(16)
85. Restaurant worker	0	1	2		(17)
86. Art dealer	0	1	2		(18)
87. Motorcycle driver	0	1	2		(19)
88. Police judge	0	1	2		(20)
89. Referee (sporting events)	0	1	2		(21)
90. Truck farmer	0	1	2		(22)
91. Filling station attendant	0	1	2		(23)
92. Writer of scientific or technical article	0	1	2		(24)
93. Social science teacher	0	1	2		(25)
94. Inventory controller	0	1	2		(26)
95. Master of ceremonies	0	1	2		(27)
96. Dramatic coach	0	1	2		(28)
97. Blaster (dynamite)	0	1	2		(29)
98. Mind reader	0	1	2		(30)
99. English teacher	0	1	2		(31)
100. Sales manager	0	1	2		(32)
101. Tree surgeon	0	1	2		(33)
102. Editor of a scientific journal	0	1	2		(34)
103. Director of welfare agency	0	1	2		(35)
104. IBM equipment operator	0	1	2		(36)
105. Travelling salesman	0	1	2		(37)
106. Concert singer	0	1	2		(38)
107. F.B.I. agent	0	1	2		(39)
108. Prosecuting attorney	0	1	2		(40)
109. Factory foreman	0	1	2		(41)
110. College professor	0	1	2		(42)
111. Tool designer	0	1	2		(43)
112. Geologist	0	1	2		(44)
113. Asst. city school superintendent	0	1	2		(45)
114. Financial analyst	0	1	2		(46)
115. Real estate salesman	0	1	2		(47)

	U	L	D		Code
116. Composer	0	1	2		(48)
117. Mountain climber	0	1	2		(49)
118. Congressional investigator	0	1	2		(50)
119. Portrait artist	0	1	2		(51)
120. Machinist	0	1	2		(52)
121. Locomotive engineer	0	1	2		(53)
122. Botanist	0	1	2		(54)
123. Personal counsellor	0	1	2		(55)
124. Cost estimating clerk	0	1	2		(56)
125. Industrial relations consultant	0	1	2		(57)
126. Stage director	0	1	2		(58)
127. Explorer	0	1	2		(59)
128. Supreme court judge	0	1	2		(60)
129. Draftsman	0	1	2		(61)
130. Judge	0	1	2		(62)
131. Photoengraver	0	1	2		(63)
132. Scientific research worker	0	1	2		(64)
133. Psychiatric case worker	0	1	2		(65)
134. Pay roll clerk	0	1	2		(66)
135. Sports promoter	0	1	2		(67)
136. Playwright	0	1	2		(68)
137. Test pilot	0	1	2		(69)
138. Criminologist	0	1	2		(70)
139. Children's clothing designer	0	1	2		(71)
140. Truck driver	0	1	2		(72)
141. Electrician	0	1	2		(73)
142. Physicist	0	1	2		(74)
143. Vocational counsellor	0	1	2		(75)
144. Bank examiner	0	1	2		(76)
145. Political campaign manager	0	1	2		(77)
146. Cartoonist	0	1	2		(78)
147. Racing car driver	0	1	2		(79)
148. Book censor	0	1	2		(80)
149. Social worker	0	1	2	C.3	(7)
150. Locksmith	0	1	2		(8)
151. Funeral director	0	1	2		(9)
152. Counter-intelligence man	0	1	2		(10)
153. Architect	0	1	2		(11)
154. Shipping & receiving clerk	0	1	2		(12)
155. Criminal psychologist	0	1	2		(13)
156. Insurance clerk	0	1	2		(14)
157. Barber	0	1	2		(15)
158. Bill collector	0	1	2		(16)
159. Ward attendant	0	1	2		(17)
160. Masseur or massager	0	1	2		(18)

NOW CHECK TO BE SURE THAT YOU HAVE RESPONDED TO EACH OCCUPATIONAL TITLE

Appendix E

Vocational Preference Inventory for the Malaysian Students

The Vocational Preference Inventory
Inventori Pemilihan Vokesyenal

This is an inventory of your feelings and attitudes about many kinds of work. Fill out your answer sheet by following the directions given below.

1. Show on your answer sheet the occupations which interest or appeal to you by blackening Y for "Yes."

2. Blacken N for "No" for the occupations you dislike or find uninteresting.

3. Make no marks when you are undecided about an occupation.

Ini adalah suatu inventori mengenai perasaan dan sikap anda terhadap bermacam-macam jenis pekerjaan. Isilah kertas jawapan anda dengan mengikut arahan-arahan yang diberikan di bawah.

1. Tandakan di atas kertas jawapan anda pekerjaan-pekerjaan yang menarik minat anda atau yang anda gemari dengan menghitamkan Y bagi "Yes."

2. Hitamkan N bagi "No" pekerjaan-pekerjaan yang anda tidak suka atau yang tidak menarik minat anda.

3. Jangan dibuat sebarang tanda jika sekiranya anda tidak pasti mengenai sesuatu pekerjaan.

---

1. Pilot/Juru terbang
2. Private investigator/Penyiasat Sulit
3. YMCA secretary/Setiausaha YMCA
4. Detective/Mata-mata gelap
5. Post office clerk/Kerani Pejabat Pos
6. Route salesman/Jurujual kawasan
7. Electronic technician/Juruteknik elektronik
8. Humorist/Penulis ruangan lucu
9. Photographer/Jurugambar
10. Interplanetary scientist/Ahli sains cekerewala
11. Aeroplane mechanic/Mekanik kapal terbang
12. Meteorologist/Ahli kaji cuaca
13. Foreign missionary/Muballigh
14. Bookkeeper/Penyimpan kira-kira
15. Speculator/Spekulator
16. Poet/Penyair
17. Deep sea diver/Juruselam lautan dalam
18. Newspaper editor/Pengarang akhbar
19. Kindergarten school teacher/Guru sekolah tadika
20. Lawyer/Peguam

21. Fish and Wildlife specialist/Pakar ikan dan binatang buas
22. Biologist/Ahli kajihayat
23. Secondary school teacher/Guru sekolah menengah
24. Quality control expert/Pakar kawalan kualiti
25. Buyer/Pembeli
26. Symphony conductor/Pemimpin simponi
27. Wrecker (building)/Peruntuh (bangunan)
28. Narcotics inspector/Merinyu narkotik
29. Primary school teacher/Guru sekolah rendah
30. School principal/Gurubesar sekolah

31. Power station operator/Operator janaletrik
32. Astronomer/Pengkaji cakerawala
33. Juvenile delinquency expert/Pakar jenayah kanak-kanak
34. Budget reviewer/Penyemak belanjawan
35. Stock & Bond salesman/Jurujual saham dan Bon
36. Musician/Ahli musik
37. Prize fighter/Ahli tinju
38. Diplomat/Diplomat
39. Experimental laboratory engineer/Jurutera makmal percubaan
40. Crane operator/Operator kren

41. Master plumber/Pakar pemasang paip
42. Aeronautical design engineer/Jurutera corak kapal terbang
43. Speech therapist/Therapis pertuturan
44. Traffic manager/Pengurus lalu-lintas
45. Manufacturer's representative/Wakil pengilang
46. Author/Pengarang
47. Fireman/Ahli bomba
48. Army general/General tentera darat
49. Interior decorator/Pesolek bangunan
50. Novelist/Novelis
51. Power shovel operator/Operator jentera pengorek
52. Anthropologist/Antropologis
53. Marriage counsellor/Penasihat perkahwinan
54. Statistician/Perangkawan
55. Television producer/Penerbit talivisyen
56. Commercial artist/Pelukis perdagangan
57. Wild animal trainer/Pelatih binatang liar
58. U.N. official/Pegawai Bangsa-bangsa Bersatu
59. Sculptor/Juru-ukir
60. Automobile mechanic/Mekanik kereta

61. Surveyor/Juru-ukur
62. Zoologist/Ahli Zooloji
63. Physical education teacher/Guru pendidikan jasmani
64. Court stenographer/Jurutrengkas mahkamah
65. Hotel manager/Pengurus hotel
66. Free lance writer/Penulis bebas
67. Stunt man (motion pictures)/Stunt man (wayang gambar)
68. Criminal lawyer/Peguam jenayah
69. Professional athlete/Ahli sukan professional
70. Carpenter/Tukang kayu

71. Construction inspector/Merinyu pembinaan
72. Chemist/Ahli kimia
73. Playground director/Pengarah padang permainan
74. Bank teller/Kerani bank
75. Business executive/Eksekutif perniagaan
76. Musical arranger/Penyusun musik
77. Jockey/Joki
78. Ventriloquist/Ventrilokuis
79. Army officer/Pegawai tentera darat
80. Banker/Banker

81. Radio operator/Operator radio
82. Independent research scientist/Ahli sains penyelidik bebas
83. Clinical psychologist/Saikologis perubatan
84. Tax expert/Pakar cukai
85. Restaurant worker/Pekerja restoran
86. Art dealer/Peniaga lukisan
87. Motorcycle driver/Penonggang motorsikal
88. Police judge/Hakim polis
89. Referee (sporting events)/Pengadil (sukan)
90. Truck gardener/Pekebun sayur

91. Filling station attendant/Atendan kedai minyak
92. Writer of scientific or technical articles/Penulis rencana sains teknik
93. Social science teacher/Guru sains kemasyarakatan
94. Inventory controller/Pengawal perkakas atau alat-alat
95. Master of ceremonies/Juru acara
96. Dramatic coach/Pengajar drama
97. Blaster (dynamiter)/Penembak bukit
98. Mind reader/Pembaca fikiran orang
99. English teacher/Guru bahasa Inggeris
100. Sales manager/Pengurus jualan

101. Tree surgeon/Penggunting pokok
102. Editor of a scientific journal/Penyunting jurnal sains
103. Director of welfare agency/Pengarah wakilan kebajikan
104. IBM equipment operator/Operator alat-alat IBM
105. Travelling salesman/Jurujual berkereta
106. Concert singer/Penyanyi konset
107. F.B.I. Agent/Agen F.B.I.
108. Public prosecutor/Pendakwa raya
109. Factory foreman/Penyelia kilang
110. College professor/Professor universiti

111..Tool designer/Pencorak alat-alat
112. Geologist/Ahli kaji bumi
113. Assistant school supervisor/Penolong Penyelia sekolah-sekolah
114. Financial analyst/Penganalisa kewangan
115. Property salesman/Jurujual harta, rumah, tanah
116. Composer/Penggubah lagu
117. Mountain climber/Pendaki gunung
118. Congressional investigator/Penyiasat Konggres
119. Portrait artist/Pelukis potret
120. Machinist/Operator mesin

121. Locomotive engineer/Jurutera keretapi
122. Botanist/Ahli Botani
123. Personal counsellor/Penasihat peribadi
124. Cost estimator/Penilai harga
125. Industrial relation consultant/Pakar-perunding perhubungan perusahaan
126. Stage director/Pengarah pentas
127. Explorer/Peneroka
128. Supreme court judge/Hakim mahkamah tinggi
129. Draftsman/Tukang pelan
130. Judge/Hakim

131. Photoengraver/Penekat foto
132. Scientific research worker/Penyelidik sains
133. Psychiatric case worker/Penyiasat kes sakit jiwa
134. Pay roll clerk/Kerani gaji
135. Sports promoter/Penggalak sukan
136. Playwright/Penulis lakunan
137. Test pilot/Juru terbang ujian
138. Criminologist/Pakar jenayah
139. Children's clothing designer/Pencorak pakaian kanak-kanak
140. Truck driver/Derebar lori

141. Electrician/Juru letrik
142. Physicist/Ahli Fizik
143. Vocational counsellor/Penasihat vokesyenal
144. Bank examiner/Pemeriksa kira-kira bank
145. Political campaign manager/Pengurus kempen politik
146. Cartoonist/Pelukis kartun
147. Racing car driver/Derebar kereta lumba
148. Book censor/Penapis buku
149. Social worker/Pengawai kebajikan masyarakat
150. Locksmith/Tukang kunci
151. Funeral director/Pengarah jenazah
152. Counter-intelligence man/Pegawai penentang perisik rahsia
153. Architect/Akitek
154. Shipping & Receiving clerk/Kerani Penghantar & Penerima
155. Criminal psychologist/Saikologis jenayah
156. Insurance clerk/Kerani insuran
157. Barber/Tukang gunting
158. Bill collector/Pengutip hutang
159. Ward attendant/Atendan wad
160. Masseur/Tukang urut

VOCATIONAL PREFERENCE INVENTORY (Answer sheet)
INVENTORI PEMILIHAN VOKESHENAL (Kertas jawapan)

Name/Nama:.. School/Sekolah :.. Stream/ Jurusan Science/Sains ☐ Arts/Sastera ☐

____ 1 ____ 2 ____ 3 ____ 4 ____ 5 ____ 6 ____ 7 ____ 8 ____ 9 ____ 10 Inf ____ 11 Ac

Blacken "Y" for Yes, or "N" for No. For example, Y or N.

1 Y N	11 Y N	21 Y N	31 Y N	41 Y N	51 Y N	61 Y N	71 Y N	81 Y N	91 Y N	101 Y N	111 Y N	121 Y N	131 Y N	141 Y N	151 Y N
2 Y N	12 Y N	22 Y N	32 Y N	42 Y N	52 Y N	62 Y N	72 Y N	82 Y N	92 Y N	102 Y N	112 Y N	122 Y N	132 Y N	142 Y N	152 Y N
3 Y N	13 Y N	23 Y N	33 Y N	43 Y N	53 Y N	63 Y N	73 Y N	83 Y N	93 Y N	103 Y N	113 Y N	123 Y N	133 Y N	143 Y N	153 Y N
4 Y N	14 Y N	24 Y N	34 Y N	44 Y N	54 Y N	64 Y N	74 Y N	84 Y N	94 Y N	104 Y N	114 Y N	124 Y N	134 Y N	144 Y N	154 Y N
5 Y N	15 Y N	25 Y N	35 Y N	45 Y N	55 Y N	65 Y N	75 Y N	85 Y N	95 Y N	105 Y N	115 Y N	125 Y N	135 Y N	145 Y N	155 Y N
6 Y N	16 Y N	26 Y N	36 Y N	46 Y N	56 Y N	66 Y N	76 Y N	86 Y N	96 Y N	106 Y N	116 Y N	126 Y N	136 Y N	146 Y N	156 Y N
7 Y N	17 Y N	27 Y N	37 Y N	47 Y N	57 Y N	67 Y N	77 Y N	87 Y N	97 Y N	107 Y N	117 Y N	127 Y N	137 Y N	147 Y N	157 Y N
8 Y N	18 Y N	28 Y N	38 Y N	48 Y N	58 Y N	68 Y N	78 Y N	88 Y N	98 Y N	108 Y N	118 Y N	128 Y N	138 Y N	148 Y N	158 Y N
9 Y N	19 Y N	29 Y N	39 Y N	49 Y N	59 Y N	69 Y N	79 Y N	89 Y N	99 Y N	109 Y N	119 Y N	129 Y N	139 Y N	149 Y N	159 Y N
10 Y N	20 Y N	30 Y N	40 Y N	50 Y N	60 Y N	70 Y N	80 Y N	90 Y N	100 Y N	110 Y N	120 Y N	130 Y N	140 Y N	150 Y N	160 Y N

Appendix F

Work Values Inventory for the Malaysian Students

Name/Mana: .... School/Sekolah: ....

Stream/Jurusan: Science/Sains ☐

Arts/Sastera ☐

Work Values Inventory
Inventori Nilai-nilai Mengenai Pekerjaan

The statements below represent values which people consider important in their work. These are satisfactions which people often seek in their jobs or as a result of their jobs. They are not all considered equally important; some are very important to some people but of little importance to others. Read each statement carefully and indicate how important it is for you.

Kenyataan-kenyataan di bawah ini merupakan nilai-nilai yang orang anggap penting di dalam pekerjaan mereka. Kenyataan-kenyataan ini adalah rasa puashati yang orang selalu cari di dalam pekerjaan-pekerjaan mereka ataupun rasa puashati yang orang selalu cari dari hasil kerja-kerja mereka. Nilai-nilai ini tidak semuanya di anggap sama penting; setengah-setengahnya adalah amat penting bagi setengah-setengah orang tetapi tidak begitu penting bagi orang lain. Bacalah tiap-tiap kenyataan ini dengan cermat dan nyatakan betapa pentingnya tiap-tiap kenyataan itu bagi anda.

5 means	"very important"
5 bererti	"amat penting"
4 means	"important"
4 bererti	"penting"
3 means	"moderately important"
3 bererti	"sederhana pentingnya"
2 means	"of little importance"
2 bererti	"tidak berapa penting"
1 means	"unimportant
2 bererti	"tidak penting"

(Fill in one rectangle by each item to show your rating of the statement.)

(Isikan satu petak di samping tiap-tiap kenyataan untuk menunjukkan penilaian anda terhadap kenyataan itu.)

Work in which you......
Pekerjaan dalam mana anda......

1. .....have to keep solving new problems
   .....terpaksa menyelesaikan masalah-masalah baru. [1] [2] [3] [4] [5]

2.	.....help others .....menolong orang lain	1	2	3	4	5
3.	.....can get a raise .....boleh mendapat kenaikan	1	2	3	4	5
4.	.....look forward to changes in your job .....mengharapkan perubahan-perubahan di dalam pekerjaan anda	1	2	3	4	5
5.	.....have freedom in your own area .....mempunyai kebebasan di dalam lapangan anda sendiri	1	2	3	4	5
6.	.....gain prestige in your field .....mendapat penghormatan di dalam bidang anda	1	2	3	4	5
7.	.....need to have artistic ability .....perlu mempunyai kebolehan kesenian	1	2	3	4	5
8.	.....are one of the gang .....menjadi salah seorang ahli kumpulan itu	1	2	3	4	5
9.	.....know your job will last .....tahu yang pekerjaan anda akan kekal	1	2	3	4	5
10.	.....can be the kind of person you would like to be .....boleh menjadi orang yang anda ingin jadi	1	2	3	4	5
11.	.....have a boss who gives you a square deal .....mempunyai ketua yang adil	1	2	3	4	5
12.	.....like the setting in which your job is done .....suka akan tempat bekerja di mana urusan anda diselenggarakan	1	2	3	4	5
13.	.....get the feeling of having done a good day's job .....mendapat perasaan yang anda telah beres menyelenggarakan kerja untuk sehari	1	2	3	4	5
14.	.....have authority over others .....berkuasa atas orang lain	1	2	3	4	5

15. .....try out new ideas and suggestions
.....mencuba ide-ide dan saranan-saranan baru
1 2 3 4 5

16. .....create something new
.....mencipta sesuatu yang baru
1 2 3 4 5

17. .....know by the results when you've done a good job
.....tahu dari hasilnya bila anda telahpun membereskan sesuatu urusan dengan sempurna
1 2 3 4 5

18. .....have a boss who is reasonable
.....mempunyai ketua yang boleh bertolak-ansur
1 2 3 4 5

19. .....are sure of always having a job
.....pasti yang anda sentiasa mempunyai pekerjaan
1 2 3 4 5

20. .....add beauty to the world
.....menambah kecantikan kepada alam
1 2 3 4 5

21. .....make your own decisions
.....membuat keputusan-keputusan anda sendiri
1 2 3 4 5

22. .....have pay increases that keep up with the cost of living
.....mendapat kenaikan gaji yang selaras dengan nilai hidup
1 2 3 4 5

23. .....are mentally challenged
.....dicabar dari segi mental
1 2 3 4 5

24. .....use leadership ability
.....menggunakan kebolehan kepemimpinan
1 2 3 4 5

25. .....have adequate lounge, toilet and other facilities
.....mempunyai bilik rihat, kemudahan tandas dan lain-lain kemudahan yang cukup
1 2 3 4 5

26. .....have a way of life, while not on the job, that you like
.....mempunyai cara hidup yang anda suka di luar masa bekerja
1 2 3 4 5

27.	.....form friendships with your fellow employees .....membentuk persahabatan dengan rakan-rakan sepekerjaan	1	2	3	4	5
28.	.....know that others consider your work important .....tahu yang orang lain menganggap kerja anda itu penting	1	2	3	4	5
29.	.....do not do the same thing all the time .....tidak membuat perkara yang sama setiap masa	1	2	3	4	5
30.	.....feel you have helped another person .....rasa yang anda telah membantu orang lain	1	2	3	4	5
31.	.....add to the well-being of other person .....membaiki hal kebajikan orang lain	1	2	3	4	5
32.	.....do many different things .....membuat bermacam-macam perkara yang berlainan	1	2	3	4	5
33.	.....are looked up to by others .....dihormati oleh orang lain	1	2	3	4	5
34.	.....have good contacts with fellow workers .....mempunyai pertalian yang baik dengan rakan-rakan sepekerjaan	1	2	3	4	5
35.	.....lead the kind of life you most enjoy .....hidup menurut cara yang anda amat sukai	1	2	3	4	5
36.	.....have a good place in which to work (good lighting, quiet, clean, enough space, etc.) .....mempunyai tempat yang baik untuk bekerja (cukup cerah, sunyi, bersih, selesa dan lain-lain)	1	2	3	4	5
37.	.....plan and organize the work of others .....merancang dan menyusun kerja-kerja orang lain	1	2	3	4	5
38.	.....need to be mentally alert .....perlu cergas otak	1	2	3	4	5

39. .....are paid enough to live right
.....dibayar gaji secukupnya untuk hidup sempurna
1 2 3 4 5

40. .....are your own boss
.....menjadi tuan sendiri
1 2 3 4 5

41. .....make attractive products
.....membuat hasil-hasil yang menarik
1 2 3 4 5

42. .....are sure of another job in the company if your present job ends
.....terjamin mendapat kerja lain di dalam syarikat itu jika kerja sekarang tamat
1 2 3 4 5

43. .....have a supervisor who is considerate
.....mempunyai penyelia yang bertimbang rasa
1 2 3 4 5

44. .....see the results of your efforts
.....melihat hasil-hasil usaha anda
1 2 3 4 5

45. .....contribute new ideas
.....menyumbangkan ide-ide baru
1 2 3 4 5

Now check to be sure that you rated every statement.

Sekarang semak semula untuk menentukan yang anda telahpun menilai tiap-tiap kenyataan.

END OF WORK VALUES INVENTORY
INVENTORI NILAI-NILAI MENGENAI
PEKERJAAN TAMAT DISINI

Appendix G

Instruction to Data Collectors in Malaysia

Instructions to the Respondents

Each one of you should have THREE different sets of papers:

1. a questionnaire
2. a Vocational Preference Inventory with answer sheet
3. a Work Values Inventory

(You may wish to show to the class each type of the papers and the answer for Vocational Preference Inventory.)

QUESTIONNAIRE

The questionnaire consists of 24 questions in English and Bahasa Malaysia.

- a. some of these questions require that you write the answers, like Question 1, 2, 7, 11, etc.
- b. some require that you place a tick like this (✓) in the box provided, like Question 3, 5, 9, etc.
- c. some require that you write numbers in the boxes. Refer especially to Question 21. (Tell them that they have to fill all the boxes provided with numbers from 1 to 15. Explain the meaning of ranking in order of importance, if you feel necessary.)

Vocational Preference Inventory

The VPI has two parts. One part lists 160 occupational titles; the other part is the answer sheet. (Show them what you mean, if necessary.)

Please read each title and decide for yourself whether

- a. you like it
- b. you dislike it
- c. you are undecided about it; that is, neither like nor dislike

Once you have decided, please mark your answer (a or b above) on the answer sheet. If you like the occupation, you should blacken Y on the answer sheet, corresponding to the number given on the test.

If you dislike it, you should blacken N on the answer sheet. Make sure that the number on the answer sheet corresponds with the number on the test. That is, if the number is 35 on the test, then the part to be marked on the answer sheet must also be 35.

IF YOU ARE UNDECIDED, DON'T MAKE ANY MARK ON THE ANSWER SHEET.

Nothing is to be written on the VPI. All writing must only be done on the answer sheet, including your name, the name of your school, the stream that you are in.

(Note to data collector: Please collect both items separately when completed.)

Work Values Inventory

The Work Values Inventory consists of 45 statements regarding the satisfaction or reward one looks for in, and from work. The relative importance of each statement varies from person to person. There is no right or wrong answer. Some statements may be very important to some; while other statements may be very important to some others. The importance of each statement can be assigned a value of 1 to 5, 1 being the least important, and 5 the most important.

You are to read each statement carefully and decide for yourself how important that statement is to you. You can then blacken one of the five boxes adjacent to the statement. Each of these boxes has a number in it, which indicates the relative importance of the statement.

5 means very important
4 means important
3 means moderately important
2 means of little importance
1 means unimportant

(Note to data collector: Please put the scale on the blackboard and give further explanation if necessary. Let the pupils have as much time as they need to complete all the 3 sets.

IMPORTANT: PLEASE STRESS THE IMPORTANCE OF GIVING THEIR NAMES, SCHOOL, AND STREAM ON ALL THE SETS.)

Arahan Kepada Murid-Murid

Tiap-tiap seorang kamu diberi TIGA set kertas:

1. satu soalselidik
2. satu Inventori Pemilihan Vokesyenal
3. satu Inventori Nilai-nilai Mengenai Pekerjaan

(Guru tunjukkan tiap-tiap set kepada murid-murid dan juga kertas jawapan untuk Inventori Pemilihan Vokesyenal.)

SOALSELIDIK

Set ini mengandungi 24 soalan dalam Bahasa Inggeris dan Bahasa Malaysia.

a. setengah dari soalan-soalan ini memerlukan kamu menulis jawapan-jawapannya seperti Soalan 1, 2, 7, 11, dan lain-lain.

b. setengahnya memerlukan kamu menandakan begini (✓) dalam kotak-kotak yang telah disediakan seperti Soalan 3, 5, 9, dan lain-lain.

c. Soalan 21 memerlukan kamu menyenaraikan angka-angka dalam kotak-kotak bagi menunjukkan pentingnya jawapan-jawapan itu. (Untuk guru: beri penjelasan tentang "ranking in order of importance.")

Inventori Pemilihan Vokesyenal

Set ini terdiri dari 2 bahagian. Bahagian pertama mengandungi satu senarai nama-nama untuk 160 jenis kerja; behagian kedua adalah kertas jawapan. (Guru tunjuk pada murid contoh-contoh VPI.)

Kamu dikehendaki membaca tiap-tiap jenis kerja dan menentukan samada kamu

a. suka kerja itu

b. tidak suka kerja itu

c. tidak dapat menentukan samada suka atau tidak

Setelah menetapkan jawapannya, kamu dikehendaki menandakan jawapan (a atau b) di dalam kertas jawapan. Sekiranya kamu suka sesuatu kerja kamu dikehendaki menghitamkan Y dalam kertas jawapan untuk angka yang sama dengan angka jenis kerja dalam senarai nama-nama kerja. Jikalau kamu tidak suka kerja itu, kamu dikehendaki menghitamkan N dalam kertas jawapan. Kamu mesti berhati-hati dalam menentukan bahawa angka-angka jawapan dalam kertas jawapan adalah sama dengan angka-angka dalam kertas soalan. Misalnya, sekiranya angka dalam kertas soalan adalah 35; bahagian yang mesti ditandakan dalam kertas jawapan adalah 35 juga.

SEKIRANYA KAMU TIDAK DAPAT MENENTUKAN PILIHAN KAMU, JANGAN BUAT APA-APA TANDA DI DALAM KERTAS JAWAPAN.

Jangan tulis apa-apa pun dalam VPI. Semua yang hendak ditulis mesti dicatit dalam kertas jawapan termasuk nama kamu, sekolah dan jurusan.

(Untuk guru: Tolong kumpulkan kedua-dua behagian berasingan setelah siap.)

Inventori Nilai-nilai Pekerjaan

Inventori Nilai-nilai Pekerjaan terdiri dari 45 kenyataan berkenaan dengan rasa puashati yang seseorang berusaha untuk mendapatnya dari kerjanya. Pentingnya tiap-tiap kenyataan adalah berlainan dari seorang keseorang. Tidak ada jawapan betul atau salah. Setengah kenyataan barangkali penting bagi setengah orang; yang lain bagi orang lain. Pentingnya tiap-tiap kenyataan itu boleh diberi nilai 1 hingga 5, 1 bererti tidak penting dan 5 amat penting.

Kamu dikehendaki membaca tiap-tiap kenyataan dengan teliti dan menetapkan sejauhmana kenyataan itu penting kepada kamu. Lepas itu kamu bolehlah menghitamkan satu daripada lima kotak-kotak berhampiran dengan kenyataan itu. Tiap-tiap kotak ini mempunyai satu angka dalamnya yang menunjukkan pentingnya kenyataan itu.

5 bererti amat penting
4 bererti penting
3 bererti sederhana pentingnya
2 bererti tidak begitu penting
1 bererti tidak penting

(Guru terangkan kepada murid bagaimana menggunakan senarai nilai ini. Sekiranya murid-murid sudah jelas mengenai apa yang mereka mesti buat, bolehlah mereka mulai menjawab soalan-soalan dalam ketiga-

ketiga set. Berilah kepada mereka sebanyak mana masa yang mereka perlu menjawab soalan-soalan itu.

AMAT PENTING: MURID DIINGATKAN JANGAN LUPA MENULIS NAMA MEREKA, NAMA SEKOLAH DAN JURUSAN DALAM SEMUA KERTAS JAWAPANNYA.)

Appendix H

VPI Factor Structure as Identified by Wakefield and Doughtie (1973)

VPI Factor Structure as Identified by Wakefield and Doughtie (1973)

VPI Scales	*N* = 377	Conventional Economic	Feminine Social	Social Desirability (-)	Material World	Status	Artistic
R		-.47	-.10	-.17	.56	-.52	.15
I		.20	.09	-.35	.63	.00	.13
S		.34	.65	-.09	.23	.08	.08
C		.73	.04	.05	.26	.04	-.09
E		.86	.03	-.18	.06	.09	.19
A		.09	.49	-.19	.26	.12	.56
SC		-.25	-.03	.57	-.19	.44	-.15
M		.15	-.84	-.16	.10	-.08	-.07
ST		.20	.13	.02	.02	.82	.10
IN		.00	.08	.79	-.19	-.01	-.04
AC		.52	.37	-.45	.52	-.01	.03
VAR		2.04	1.54	1.40	1.25	1.17	.44
%TV		26.0	19.7	17.9	15.9	14.9	5.7
%CV		18.5	14.0	12.8	11.4	10.[illegible]	4.0

Note. R = Realistic; I = Investigative; S = Social; C = Conventional; E = Enterprising; A = Artistic; SC = Self-Control; M = Masculinity; ST = Status; IN = Infrequency; AC = Acquiescence; VAR = Variance; %TV = Percentage of Total Variance; %CV = Percentage of Common Variance

Appendix I

VPI Factor Structures

Table II

VPI Factor Structure for Canadian (Can) and Malaysian (Mal) Boys

	Vocational Interest		Status		Self-Confidence (-)		Masculinity	
	Can	Mal	Can	Mal	Can	Mal	Can	Mal
R	0.505	0.776	-0.590	-0.022	-0.072	-0.074	0.428	-
I	0.366	0.575	0.145	0.244	-0.667	-0.601	0.318	-
S	0.742	0.857	0.081	0.110	-0.103	-0.049	-0.146	-
C	0.770	0.852	-0.066	0.053	0.026	0.127	0.054	-
E	0.818	0.844	-0.023	0.042	-0.063	0.141	0.046	-
A	0.607	0.695	0.081	-0.069	-0.107	-0.054	-0.384	-
SC	-0.200	-0.304	0.742	0.678	0.433	0.457	0.127	-
M	-0.030	0.017	0.016	0.807	-0.018	-0.035	0.891	-
ST	0.323	0.266	0.853	0.773	-0.088	0.018	-0.011	-
IM	0.032	0.238	0.230	0.175	0.864	0.865	0.131	-
AC	0.791	0.859	0.001	0.163	-0.210	-0.087	0.224	-
VAR	3.342	4.547	1.720	1,847	1.464	1.375	1.337	-
%TV	30.378	41.341	15.633	16.790	13.308	12.499	12.153	-
%CV	42.503	58.531	21.873	23.772	18.620	17.697	17.004	-

Note. VAR = Variance; %TV = Percentage of Total Variance; %CV = Percentage of Common Variance; Can (*N* = 472); Mal (*N* = 613)

Table 12

VPI Factor Structure for Rural Canadian (RC) and Rural Malaysian (RM) Boys

	Vocational Interest		Status		Self-Confidence (-)		Masculinity	
	RC	RM	RC	RM	RC	RM	RC	RM
R	0.448	0.814	-0.600	0.017	0.085	0.075	0.492	-
I	0.500	0.611	0.230	0.230	(-0.385)	-0.596	0.432	-
S	0.777	0.865	0.003	0.131	-0.038	-0.126	-0.153	-
C	0.727	0.881	0.068	0.043	-0.050	0.138	0.143	-
E	0.799	0.857	-0.008	0.082	-0.063	0.159	0.083	-
A	0.648	0.657	-0.041	-0.068	0.054	-0.036	-0.118	-
SC	-0.224	-0.298	0.801	0.729	(0.370)	0.426	0.079	-
M	-0.061	0.075	-0.031	0.842	-0.004	0.022	0.918	-
ST	0.353	0.289	0.846	0.821	-0.074	-0.083	-0.015	-
IN	0.039	0.245	0.132	0.182	0.945	0.875	-0.003	-
AC	0.805	0.840	-0.067	0.202	0.008	-0.219	0.277	-
VAR	3.468	4.669	1,800	2.073	1.202	1.425	1.419	-
%TV	31.531	42.443	16.365	18.844	10.925	12.951	12.903	-
%CV	43.961	57.172	22.817	25.383	15.232	17.445	17.990	-

Note. VAR = Variance; %TV = Percentage of Total Variance; %CV = Percentage of Common Variance; RC (*N* = 158); RM (*N* = 175)

Table I3

VPI Factor Structure for Urban Canadian (UC) and Urban Malaysian (UM) Boys

	Vocational Interest		Status		Self-Confidence (-)		Masculinity	
	UC	UM	UC	UM	UC	UM	UC	UM
R	*0.558*	*0.756*	*-0.557*	-0.022	-0.177	-0.171	0.367	-
I	0.313	*0.561*	0.090	0.246	*-0.684*	*-0.611*	0.328	-
S	*0.720*	*0.854*	0.157	0.106	-0.133	-0.014	-0.145	-
C	*0.790*	*0.839*	-0.111	0.068	0.038	0.111	-0.007	-
E	*0.821*	*0.840*	0.018	0.021	-0.082	0.133	0.022	-
A	*0.582*	*0.713*	0.129	-0.077	-0.118	-0.057	*-0.448*	-
SC	-0.207	-0.302	*0.617*	*0.644*	*0.557*	*0.484*	0.161	-
M	-0.006	-0.008	0.070	*0.804*	0.001	-0.085	*0.877*	-
ST	0.293	0.265	*0.877*	*0.728*	-0.015	0.101	0.054	-
IN	0.010	0.239	0.151	0.173	*0.875*	*0.840*	0.152	-
AC	*0.782*	*0.866*	0.043	0.142	-0.252	-0.032	0.211	-
VAR	3.304	4.502	1.552	1.725	1.678	1.395	1.330	-
%TV	30.040	40.923	14.110	15.681	15.250	12.679	12.090	-
%CV	42.020	59.066	19.737	22.633	21.332	18.301	16.912	-

Note. VAR = Variance; %TV = Percentage of Total Variance; %CV = Percentage of Common Variance; UC (*N* = 314); UM (*N* = 438)

Table I4

VPI Factor Structure for Rural Canadian Two (RC2) and Rural Malaysian Two (RM2) Boys

	Vocational Interest		Status		Self-Confidence (-)		Masculinity	
	RC2	RM2	RC2	RM2	RC2	RM2	RC2	RM2
R	0.529	0.799	-0.599	-0.041	0.068	0.226	0.394	-
I	0.596	0.736	0.267	0.191	-0.244	-0.393	0.364	-
S	0.772	0.884	-0.009	0.087	-0.029	0.026	-0.180	-
C	0.752	0.854	0.073	0.014	-0.069	0.178	0.124	-
E	0.801	0.838	-0.027	0.087	-0.120	0.251	0.031	-
A	0.644	0.786	-0.061	0.020	0.149	-0.074	-0.154	-
SC	-0.219	-0.304	0.817	0.797	(0.323)	0.273	0.085	-
M	-0.041	0.112	-0.027	0.807	-0.004	0.051	0.941	-
ST	0.353	0.302	0.844	0.829	-0.060	-0.134	-0.010	-
IN	0.005	0.168	0.125	0.127	0.955	0.926	-0.014	-
AC	0.840	0.875	-0.078	0.079	0.050	-0.090	0.181	-
VAR	3.733	4.999	1.842	2.051	1.128	1.267	1.288	-
%TV	33.933	45.446	16.749	18.644	10.252	11.519	11.711	-
%CV	46.711	60.107	23.057	24.658	14.113	15.235	16.120	-

Note. VAR = Variance; %TV = Percentage of Total Variance; %CV = Percentage of Common Variance; RC2 (*N* = 127); RM2 (*N* = 96)

Table 15

VPI Factor Structure for Rural Canadian Three (RC3) and Rural Malaysian Three (RM3) Boys

	Vocational Interest		Status		Self-Confidence (-)		Masculinity		Artistic	
	RC3	RM3	RC3	RM3	RC3	RM3	RC3	RM3	RC3	RM3
R	0.116	0.894	-0.420	0.017	0.063	-0.041	0.854	-	-	-0.180
I	0.015	0.412	-0.077	0.179	-0.749	-0.781	0.489	-	-	0.014
S	0.904	0.803	0.006	0.197	-0.058	-0.312	-0.116	-	-	0.100
C	0.873	0.917	-0.144	0.034	0.088	0.093	0.090	-	-	0.205
E	0.703	0.774	-0.163	0.064	0.418	-0.025	0.199	-	-	0.425
A	0.681	0.172	0.261	-0.044	-0.103	-0.011	0.250	-	-	0.932
SC	-0.168	-0.274	0.847	0.678	(0.329)	0.513	-0.072	-	-	-0.059
M	0.027	0.195	-0.054	0.813	-0.007	0.038	0.792	-	-	-0.306
ST	0.127	0.200	0.875	0.824	0.053	-0.123	-0.183	-	-	0.290
IN	0.072	0.303	0.361	0.443	0.822	0.725	0.206	-	-	0.023
AC	0.547	0.706	0.155	0.318	-0.187	-0.403	0.642	-	-	0.224
VAR	2.900	3.827	1.938	2.175	1.582	1.686	2.213	-	-	1.368
%TV	26.363	34.794	17.622	19.776	14.383	15.324	20.119	-	-	12.434
%CV	33.589	42.263	22.452	24.021	18.325	18.613	25.634	-	-	15.103

Note. VAR = Variance; %TV = Percentage of Total Variance; %CV = Percentage of Common Variance; RC3 (*N* = 21); RM3 (*N* = 63)

Table 16

VPI Factor Structure for Urban Canadian One (UC1) and Urban Malaysian One (UM1) Boys

	Vocational Interest		Status		Masculine		Self-Confidence (-)	
	UC1	UM1	UC1	UM1	UC1	UM1	UC1	UM1
R	0.814	0.618	-0.290	-0.591	0.111	0.354	0.066	-0.081
I	0.113	0.495	0.180	-0.179	-0.118	0.551	-0.764	-0.419
S	0.180	0.800	0.103	0.082	-0.776	0.061	-0.055	-0.014
C	0.731	0.798	0.004	-0.114	-0.256	0.015	0.089	0.020
E	0.844	0.821	0.121	0.172	-0.071	-0.045	-0.187	0.120
A	0.610	0.739	-0.011	0.212	-0.005	-0.132	-0.037	0.253
SC	-0.132	-0.107	0.759	0.167	0.021	0.278	0.439	0.781
M	0.116	-0.094	0.638	0.145	0.552	0.846	-0.109	0.134
ST	-0.032	0.377	0.856	0.814	-0.216	0.279	-0.090	0.098
IN	0.094	0.124	0.377	-0.047	-0.113	-0.138	0.789	0.888
AC	0.694	0.878	0.094	-0.013	-0.500	0.117	-0.058	0.011
VAR	2.849	4.074	2.008	1.189	1.314	1.356	1.474	1.689
%TV	25.903	37.037	18.258	10.810	11.946	12.329	13.398	15.354
%CV	37.268	49.036	26.268	14.312	17.187	16.323	19.277	20.329

Note. VAR = Variance; %TV = Percentage of Total Variance; %CV = Percentage of Common Variance; UC1 (*N* = 67); UM1 (*N* = 102)

Table 17

VPI Factor Structure for Urban Canadian Two (UC2) and Urban Malaysian Two (UM2) Boys

	Vocational Interest		Status		Self-Confidence (-)		Masculinity	
	UC2	UM2	UC2	UM2	UC2	UM2	UC2	UM2
R	0.400	0.776	-	0.017	-0.583	-0.160	0.430	-
I	(0.395)	0.626	-	0.224	-0.416	-0.570	0.409	-
S	0.788	0.870	-	0.120	-0.040	0.013	-0.030	-
C	0.742	0.847	-	0.097	-0.170	0.141	0.028	-
E	0.768	0.855	-	-0.006	-0.089	0.167	0.138	-
A	0.639	0.755	-	-0.135	-0.080	-0.007	-0.469	-
SC	-0.213	-0.314	-	0.674	0.844	0.455	0.004	-
M	0.000	0.025	-	0.818	0.102	-0.104	0.870	-
ST	0.491	0.277	-	0.748	0.666	0.169	0.021	-
IN	-0.131	0.263	-	0.215	0.719	0.836	0.096	-
AC	0.716	0.870	-	0.161	-0.196	-0.004	0.437	-
VAR	3.303	4.769	-	1.848	2.279	1.344	1.550	-
%TV	30.023	43.353	-	16.802	20.717	12.218	14.087	-
%CV	46.312	59.902	-	23.217	31.958	16.881	21.730	-

Note. VAR = Variance; %TV = Percentage of Total Variance; %CV = Percentage of Common Variance; UC2 (*N* = 183); UM2 (*N* = 237)

Table 18

VPI Factor Structure for Urban Canadian Three (UC3) and Urban Malaysian Three (UM3) Boys

	Vocational Interest		Status		Self-Confidence (-)		Masculinity	
	UC3	UM3	UC3	UM3	UC3	UM3	UC3	UM3
R	0.198	0.786	-	-0.273	(-0.389)	0.157	0.717	-
I	0.436	0.605	-	0.073	-0.224	(-0.329)	0.606	-
S	0.824	0.850	-	0.024	-0.193	0.023	-0.034	-
C	0.719	0.820	-	0.031	0.088	0.195	0.196	-
E	0.866	0.813	-	0.020	-0.163	0.061	0.037	-
A	0.711	0.574	-	0.137	-0.209	-0.172	-0.143	-
SC	-0.035	-0.425	-	0.657	0.887	(0.380)	0.036	-
M	-0.350	0.066	-	0.676	0.268	0.304	0.718	-
ST	0.666	0.223	-	0.796	0.321	-0.248	0.016	-
IN	-0.097	0.100	-	0.146	0.699	0.882	-0.199	-
AC	0.824	0.849	-	0.078	-0.200	-0.063	0.305	-
VAR	3.937	4.334	-	1.650	1.807	1.285	1.592	-
%TV	35.790	39.396	-	15.002	16.430	11.683	14.476	-
%CV	53.662	59.618	-	22.702	24.634	17.680	21.704	-

Note. VAR = Variance; %TV = Percentage of Total Variance; %CV = Percentage of Common Variance; UC3 (*N* = 64); UM3 (*N* = 99)

Appendix J

WVI Factor Structure as Identified by Hendrix and Super (1968)

WVI Factor Structure as Identified by Hendrix and Super (1968)

WVI Scales	N = 51	Material World	Goodness of Life	Self-Expression	Behavior Control
CR				.74	
MA					.74
AC					
SU		.58	.65		
SR		.75			
WL		.56			
SE		.89			
AS			.87		
ES					
PR					.60
IN					.78
VA				.71	
ER		.88			
AL			.71		
IS				.61	

Note. CR = Creativity; MA = Management; AC = Achievement; SU = Surrounding; SR = Supervisory Relations; WL = Way of Life; SE = Security; AS = Associates; ES = Esthetic; PR = Prestige; IN = Independence; VA = Variety; ER = Economic Return; AL = Altruism; IS = Intellectual Stimulation.

Appendix K

WVI Factor Structures

Table K1

WVI Factor Structure for Canadian (Can) and Malaysian (Mal) Boys

	Material		Self-Expression and Social Relations		Power and Prestige		Esthetic Expression	
	Can	Mal	Can	Mal	Can	Mal	Can	Mal
CR	0.021	0.012	0.714	0.692	0.465	0.146	-	0.304
MA	0.180	-0.035	0.122	0.349	0.718	0.743	-	0.062
AC	0.433	0.434	0.621	0.495	0.268	0.233	-	0.265
SU	0.558	0.641	0.105	0.037	0.469	0.253	-	0.212
SR	0.747	0.770	0.193	0.276	0.074	-0.112	-	0.077
WL	0.605	0.556	0.256	0.261	0.280	0.396	-	0.094
SE	0.747	0.738	0.134	0.228	0.280	0.145	-	-0.018
AS	0.614	0.479	0.295	0.524	0.186	0.003	-	0.044
ES	0.089	0.082	0.499	0.189	0.280	0.042	-	0.744
PR	0.380	0.244	0.169	0.037	0.633	0.744	-	0.061
IN	0.219	0.260	0.235	0.078	0.696	0.701	-	0.203
VA	0.320	0.074	0.364	0.041	0.373	0.173	-	0.751
ER	0.685	0.769	-0.100	0.058	0.494	0.254	-	-0.001
AL	0.417	0.212	0.676	0.643	-0.121	0.171	-	-0.084
IS	0.082	0.203	0.750	0.689	0.049	0.086	-	0.122
VAR	3.344	3.093	2.622	2.207	2.551	2.062	-	1.458
STV	22.294	20.621	17.482	14.713	17.009	13.745	-	9.718
SCV	39.260	35.072	30.787	25.023	29.953	23.377	-	16.528

Note. VAR = Variance; STV = Percentage of Total Variance; SCV = Percentage of Common Variance; Can (N = 472); Mal (N = 607)

Table 12

WVI Factor Structure for Rural Canadian (RC) and Rural Malaysian (RM) Boys

	Material		Self-Expression and Social Relations		Power and Prestige		Independence		Social Relations	
	RC	RM	RC	RM	RC	RM	RC	RM	RC	RM
CR	-0.117	0.071	0.667	-	0.278	0.427	0.363	-	-	0.286
MA	0.014	-0.075	0.061	-	0.773	0.688	0.184	-	-	0.055
AC	0.399	0.422	0.645	-	0.046	0.468	0.212	-	-	0.310
SU	0.402	0.702	-0.028	-	0.493	0.172	0.195	-	-	0.080
SR	0.635	0.626	0.077	-	0.008	-0.097	0.035	-	-	0.485
WL	0.588	0.545	0.073	-	-0.233	0.463	0.497	-	-	0.142
SE	0.673	0.779	0.066	-	0.240	0.075	0.103	-	-	0.095
AS	0.687	0.308	0.193	-	0.266	0.011	-0.076	-	-	0.738
ES	0.008	0.051	0.513	-	0.415	0.539	-0.211	-	-	0.211
PR	0.382	0.265	0.115	-	0.560	0.569	0.109	-	-	-0.106
IN	0.120	0.224	-0.075	-	0.216	0.712	0.762	-	-	-0.142
VA	0.053	0.031	0.208	-	0.150	0.639	0.529	-	-	0.315
ER	0.512	0.832	-0.295	-	0.486	0.024	0.292	-	-	-0.014
AL	0.217	-0.015	0.736	-	0.026	0.232	-0.220	-	-	0.715
IS	0.008	0.382	0.676	-	-0.171	0.289	0.184	-	-	0.274
VAR	2.482	3.036	2.329	-	1.923	2.793	1.597	-	-	1.757
%TV	16.548	20.239	15.525	-	12.819	18.618	10.644	-	-	11.715
%CV	29.796	40.021	27.955	-	23.082	36.815	19.167	-	-	23.164

Note. VAR = Variance; %TV = Percentage of Total Variance; %CV = Percentage of Common Variance;

RC (*N* = 158); RM (*N* = 172)

Table K3

WVI Factor Structure for Urban Canadian (UC) and Urban Malaysian (UM) Boys

	General Work Value I		Material		Self-Expression and Social Relations		Power and Prestige		Esthetic Expression	
	UC	UM	UC	UM	UC	UM	UC	UM	UC	UM
CR	0.232	-	-	0.039	0.800	0.752	-	0.137	-	0.283
MA	0.546	-	-	-0.006	0.275	0.381	-	0.748	-	0.022
AC	0.478	-	-	0.470	0.671	0.480	-	0.208	-	0.210
SU	0.727	-	-	0.561	0.250	0.064	-	0.358	-	0.187
SR	0.679	-	-	0.815	0.251	0.214	-	-0.061	-	0.098
WL	0.627	-	-	0.562	0.383	0.270	-	0.412	-	0.014
SE	0.779	-	-	0.747	0.208	0.206	-	0.166	-	0.006
AS	0.556	-	-	0.525	0.400	0.473	-	0.074	-	0.013
ES	0.237	-	-	0.077	0.514	0.260	-	0.023	-	0.745
PR	0.664	-	-	0.256	0.317	0.019	-	0.741	-	0.104
IN	0.513	-	-	0.265	0.481	0.107	-	0.726	-	0.129
VA	0.446	-	-	0.074	0.499	-0.017	-	0.161	-	0.785
ER	0.862	-	-	0.737	0.075	0.038	-	0.334	-	0.048
AL	0.292	-	-	0.343	0.611	0.553	-	0.137	-	-0.072
IS	0.050	-	-	0.183	0.778	0.750	-	0.109	-	0.069
VAR	4.670	-	-	3.191	3.479	2.279	-	2.201	-	1.380
%TV	31.134	-	-	21.275	23.130	15.193	-	14.676	-	9.197
%CV	57.374	-	-	35.258	42.626	25.178	-	24.322	-	15.242

Note. VAR = Variance; %TV = Percentage of Total Variance; %CV = Percentage of Common Variance;

UC (*N* = 314); UM (*N* = 435)

Table K4

WVI Factor Structure for Rural Canadian Two (RC2) and Rural Malaysian Two (RM2) Boys

	Self-Expression and Social Relations		Power and Prestige		Material		Independence		Social Relations		Creativity	
	RC2	RM2	RC2	RM2	RC2	RM2	RC2	RM2	RC2	RM2	RC2	RM2
CR	0.733	-	0.263	0.313	-0.068	0.151	0.252	-	-	0.060	-	0.755
PA	0.123	-	0.785	0.692	-0.127	-0.056	0.090	-	-	0.113	-	-0.115
AC	0.714	-	0.067	0.595	0.265	0.321	0.240	-	-	0.289	-	0.191
SU	0.125	-	0.584	0.165	0.419	0.695	-0.041	-	-	0.239	-	-0.255
SR	0.073	-	-0.056	-0.067	0.658	0.701	0.131	-	-	0.430	-	-0.013
WL	0.076	-	-0.059	0.886	0.511	0.428	0.599	-	-	-0.020	-	-0.077
SE	0.126	-	0.349	0.237	0.618	0.774	0.068	-	-	-0.008	-	0.086
AS	0.185	-	0.298	0.104	0.654	0.376	-0.023	-	-	0.741	-	-0.044
ES	0.508	-	0.304	0.565	0.111	-0.023	-0.255	-	-	0.236	-	0.188
PR	0.113	-	0.615	0.608	0.258	0.223	0.254	-	-	-0.028	-	-0.534
IN	0.006	-	0.306	0.674	-0.041	0.303	0.757	-	-	-0.217	-	0.133
VA	0.291	-	0.099	0.693	0.169	-0.050	0.399	-	-	0.196	-	0.169
ER	-0.246	-	0.630	0.057	0.400	0.856	0.235	-	-	0.008	-	0.204
AL	0.767	-	-0.028	0.284	0.188	-0.003	-0.217	-	-	0.708	-	0.100
IS	0.722	-	-0.109	0.484	0.022	0.140	0.192	-	-	0.182	-	0.078
VAR	2.664	-	2.231	3.441	2.075	2.923	1.516	-	-	1.574	-	1.125
%TV	17.759	-	14.876	22.937	13.836	19.488	10.106	-	-	10.491	-	7.498
%CV	31.390	-	26.293	37.967	24.456	32.258	17.862	-	-	17.365	-	12.411

Note. VAR = Variance; %TV = Percentage of Total Variance; %CV = Percentage of Common Variance; RC2 (*N* = 127); RM2 (*N* = 96)

Table K5

WVI Factor Structure for Rural Malaysian Three (RM3) Boys

	Material	Power and Prestige	Independence	Social Relations
CR	0.069	0.407	0.315	0.293
MA	-0.091	0.730	0.177	0.017
AC	0.438	0.328	0.360	0.143
SU	0.746	0.287	0.001	-0.027
SR	0.462	0.012	-0.037	0.702
WL	0.448	-0.115	0.603	0.225
SE	0.700	-0.150	0.153	0.274
AS	0.034	-0.125	0.227	0.815
ES	0.060	0.055	0.579	0.146
PR	0.379	0.772	0.070	-0.038
IN	0.089	0.192	0.736	-0.229
VA	-0.071	0.472	0.653	0.155
ER	0.815	-0.019	0.056	-0.072
AL	-0.031	0.411	0.004	0.669
IS	0.545	0.139	0.107	0.392
VAR	2.787	1.942	2.023	2.099
%TV	18.581	12.944	13.487	13.993
%CV	31.491	21.937	22.856	23.716

Note. VAR = Variance; %TV = Percentage of Total Variance; %CV = Percentage of Common Variance; RM3 (*N* = 61).

Table 16

WVI Factor Structure for Urban Canadian One (UC1) and Urban Malaysian One (UM1) Boys

	Material		Self-Expression and Social Relations		Social Materialistic		Power and Prestige		Social Relations		Non-intellectual Esthetic Expression		Beauty and Surrounding	
	UC1	UM1	UC1	UM1	UC1	UM1	UC1	UM1	UC1	UM1	UC1	UM1	UC1	UM1
CR	-	0.044	0.830	0.762	0.033	-	-0.092	-0.176	0.204	-	-0.020	-	-	0.134
MA	-	0.040	0.051	0.403	-0.129	-	0.801	0.780	0.281	-	-0.025	-	-	0.054
AC	-	0.553	0.550	0.438	0.575	-	0.154	0.114	0.238	-	0.070	-	-	0.287
SU	-	0.519	0.406	-0.029	0.132	-	0.635	0.224	-0.149	-	0.035	-	-	0.634
SR	-	0.749	0.030	0.128	0.751	-	0.189	0.043	0.254	-	-0.089	-	-	0.069
WL	-	0.726	0.101	0.203	0.730	-	0.210	0.193	-0.041	-	0.250	-	-	-0.016
SE	-	0.758	-0.044	0.208	0.443	-	0.636	0.224	0.158	-	-0.057	-	-	0.000
AS	-	0.440	0.071	0.570	0.140	-	0.386	0.039	0.724	-	-0.032	-	-	0.013
ES	-	0.030	0.192	0.359	0.172	-	-0.046	-0.279	0.113	-	0.843	-	-	0.614
PR	-	0.362	-0.003	0.113	0.221	-	0.731	0.729	0.010	-	0.063	-	-	-0.104
IN	-	0.436	0.637	0.129	-0.008	-	0.251	0.610	-0.169	-	0.391	-	-	0.220
VA	-	-0.081	0.539	0.033	0.081	-	0.251	0.104	0.257	-	0.227	-	-	0.811
ER	-	0.707	0.036	-0.121	0.275	-	0.853	0.439	-0.064	-	0.106	-	-	0.028
AL	-	0.457	0.225	0.482	0.164	-	-0.171	0.091	0.864	-	0.108	-	-	-0.216
IS	-	0.110	0.667	0.808	0.188	-	-0.169	0.203	0.077	-	-0.598	-	-	0.140
VAR	-	3.488	2.408	2.421	1.901	-	3.156	2.030	1.679	-	1.370	-	-	1.672
%TV	-	23.234	16.052	16.143	12.672	-	21.039	13.531	11.194	-	9.137	-	-	11.147
%CV	-	36.272	22.901	25.202	18.078	-	30.075	21.123	15.970	-	13.035	-	-	17.402

Note. VAR = Variance; %TV = Percentage of Total Variance; %CV = Percentage of Common Variance; UC1 (*N* = 67); UM1 (*N* = 102).

Table K7

WVI Factor Structure for Urban Canadian Two (UC2) and Urban Malaysian Two (UM2) Boys

	Material		Power and Prestige		Self-Expression and Social Relations	
	UC2	UM2	UC2	UM2	UC2	UM2
CR	0.132	0.208	0.622	0.153	0.557	0.783
MA	0.193	0.209	0.690	0.628	0.112	0.278
AC	0.443	0.509	0.405	0.227	0.498	0.449
SU	0.621	0.591	0.365	0.402	0.132	0.057
SR	0.763	0.789	0.102	-0.031	0.260	0.236
WL	0.649	0.641	0.310	0.327	0.204	0.233
SE	0.692	0.785	0.222	0.101	0.305	0.118
AS	0.494	0.599	0.222	0.098	0.411	0.344
ES	-0.013	0.040	0.341	0.353	0.616	0.637
PR	0.335	0.301	0.729	0.719	0.207	0.002
IN	0.352	0.351	0.690	0.637	0.110	0.078
VAR	0.376	-0.090	0.433	0.582	0.342	0.198
ER	0.740	0.699	0.399	0.316	-0.145	0.081
AL	0.456	0.421	-0.049	0.066	0.689	0.463
IS	0.163	0.316	0.109	0.029	0.739	0.671
VAR	3.524	3.692	2.851	2.249	2.552	2.259
%TV	23.495	24.613	19.004	14.994	17.016	15.061
%CV	39.477	45.023	31.932	27.427	28.591	27.549

Note. VAR = Variance; %TV = Percentage of Total Variance; %CV = Percentage of Common Variance; UC2 (*N* = 182); UM2 (*N* = 235).

Table K8

WVI Factor Structure for Urban Canadian Three (UC3) and Urban Malaysian Three (UM3) Boys

	General Work Value I		General Work Value II		Material		Power and Prestige		Self-Expression and Social Relations		Esthetic Expression	
	UC3	UM3	UC3	UM3	UC3	UM3	UC3	UM3	UC3	UM3	UC3	UM3
CR	0.304	-	0.798	-	-	-0.072	-	0.078	-	0.793	-	0.282
MA	0.233	-	0.760	-	-	-0.103	-	0.725	-	0.365	-	-0.106
AC	0.500	-	0.727	-	-	0.420	-	0.201	-	0.669	-	0.101
SU	0.776	-	0.416	-	-	0.599	-	0.371	-	0.018	-	-0.176
SR	0.837	-	0.182	-	-	0.808	-	-0.089	-	0.147	-	0.067
WL	0.714	-	0.463	-	-	0.503	-	0.484	-	0.135	-	0.110
SE	0.875	-	0.252	-	-	0.670	-	0.166	-	0.104	-	0.110
AS	0.626	-	0.507	-	-	0.701	-	-0.070	-	0.239	-	0.066
ES	0.436	-	0.548	-	-	0.109	-	0.173	-	0.007	-	0.819
PR	0.493	-	0.646	-	-	0.155	-	0.759	-	-0.049	-	0.231
IN	0.505	-	0.683	-	-	0.142	-	0.812	-	0.082	-	0.150
VA	0.596	-	0.406	-	-	0.119	-	0.081	-	0.383	-	0.593
ER	0.850	-	0.342	-	-	0.782	-	0.333	-	-0.037	-	0.125
AL	0.550	-	0.534	-	-	0.479	-	-0.032	-	0.446	-	0.125
IS	0.166	-	0.804	-	-	0.407	-	0.175	-	0.580	-	-0.215
VAR	5.466	-	4.878	-	-	3.473	-	2.399	-	2.011	-	1.356
%TV	36.443	-	32.521	-	-	23.153	-	15.991	-	13.407	-	9.041
%CV	52.844	-	47.156	-	-	37.591	-	25.962	-	21.767	-	14.679

Note. VAR = Variance; %TV = Percentage of Total Variance; %CV = Percentage of Common Variance; UC3 (*N* = 65); UM3 (*N* = 98).

Appendix L

List of Participating Schools in Canada and Malaysia

List of Participating Schools in Canada

Strathcona Composite High School	Edmonton
St. Joseph's Separate School	Edmonton
St. Francis Xavier Separate School	Edmonton
Frank Maddock High School	Drayton Valley
Memorial Composite High School	Stoney Plain
Spruce Grove Secondary School	Spruce Grove

List of Participating Schools in Malaysia

Sekolah Menengah Abdullah Munsyi

Sekolah Menengah Dato' Onn

Sekolah Menengah Kebangsaan Bukit Mertajam

Sekolah Menengah Kebangsaan Kepala Batas

Sekolah Menengah Kebangsaan Sri Muda

Sekolah Menengah Kebangsaan Tanjung Bunga

Sekolah Menengah Kebangsaan Simpang Empat

Sekolah Menengah Tunku Abdul Rahman

Sekolah Menengah Raja Tun Uda

Penang Free School

Sekolah Menengah Georgetown

Sekolah Menengah Jelutong

Sekolah Menengah Kepala Batas

Methodist Boys' School

Sekolah Menengah Methodist, Nibong Tebal

Sekolah Menengah St. George, Balik Pulau

Sekolah Menengah St. Mark

Sekolah Menengah St. Xavier

Sekolah Menengah Sungai Ara

Sekolah Menengah Tinggi, Bukit Mertajam

Sekolah Menengah Westlands

Sekolah Menengah Heng Ee

Sekolah Menengah Jit Sin

Sekolah Menengah Sacred Heart

VITA

NAME: Khamis @ Amir Bin Awang

PLACE OF BIRTH: Alor Star, Kedah, Malaysia Barat

YEAR OF BIRTH: 1938

POST-SECONDARY EDUCATION AND DEGREES:

Language Institute
Lembah Pantai
Kuala Lumpur, Malaysia
1961-1962 Certificate in Education

University of Malaya
Lembah Pantai
Kuala Lumpur, Malaysia
1964-1967 B.A. (Honours)

University of Malaya
Lembah Pantai
Kuala Lumpur, Malaysia
1968-1970 M.Ed.

HONOURS AND AWARDS:

Kedah State Scholarship
1964-1967

University of Malaya Seniors Scholarship
1966

Department of Malay Studies Book Award
University of Malaya
1967

University of Malaya Book Award
University of Malaya
1967

Canadian Commonwealth Scholarship and Fellowship
1972-1975

Research Assistantship
University of Alberta
Edmonton, Alberta, Canada
1974-1975

RELATED WORK EXPERIENCE:

Secondary School Teacher
St. Michael's School
Alor Star, Kedah
1958-1960

Malay Translator/Interpreter
Legislative Council, Penang, Malaysia
1960

Language Teacher
Krian National Type Secondary School
Kuala Kurau, Perak, Malaysia
1963-1964

Graduate Teacher
Sekolah Menengah Khir Johari
Sungai Petani, Kedah, Malaysia
1967-1968

Tutor
Faculty of Education
University of Malaya
Kuala Lumpur, Malaysia
1968

Assistant Lecturer
Faculty of Education
University of Malaya
Kuala Lumpur, Malaysia
1969-1971

Deputy Dean of Education
Faculty of Education
University of Malaya
Kuala Lumpur, Malaysia
1971

Lecturer
Pusat Pengajian Ilmu Pendidikan
Universiti Sains Malaysia
Minden, Pulau Pinang, Malaysia Barat
1971-